Hawaii Longline Observer Program

Observer Field Manual

Pacific Islands Regional Office

08 August 2003
(updated 19 Mar 2004)

Manual Version: LM.03.08.08.03.19

Pacific Islands Region
National Marine Fisheries Service
National Oceanic and Atmosphere Administration
United States Department of Commerce

Forward

For biological technicians working as fisheries observers on contract in the Hawaii Longline Observer Program travel procedures, authority, and personnel issues may differ from the policies in this manual depending on your employment status. For further clarification on these issues or any other, individuals are encouraged to contact the PIRO Observer Program Operations Coordinator, or their Contracting Agent.

NMFS Pacific Islands Regional Office
1601 Kapiolani Blvd. Suite #1110
Honolulu, Hawaii 96814
Phone: (808) 973-2937
Fax: (808) 973-2941

Preface

This manual is intended to provide the Hawaii longline observer in the field with reference of data collection protocols and definitions of each datum collected. The Scientific Technician serving as an observer will also find guidance in prioritizing the work, and general discussions of expectations and policies. This manual is not intended to be a comprehensive observer handbook, and would be of limited use to readers that have not completed the PIRO Hawaii Longline Observer training course.

LIST OF ACRONYMNS

Agencies

DOC US Department of Commerce

NMFS National Marine Fisheries Service

NOAA National Oceanic and Atmospheric Administration

PIR Pacific Islands Region

PIRO Pacific Islands Regional Office

PIRFSC Pacific Islands Region Fishery Science Center

USFWS US Fish & Wildlife Service

Laws

CITES Convention on Trade of Endangered Species

ESA Endangered Species Act of 1973

MBTA Migratory Bird Treaty Act

MMPA Marine Mammal Protection Act

MSFCA Magnuson-Stevens Fishery Conservation Act

Observer Program

BFOP Northwestern Hawaiian Islands Bottomfish Observer Program

HLOP Hawaii Longline Observer Program

OC Operations Coordinator

AOC Assistant Operations Coordinator

Table of Contents

Introduction

Longline Observer Authority and Goal

The pelagic longline fishery based in Hawaii operates mainly in the Northern Central Pacific Ocean. This fishery is managed through a Fishery Management Plan (FMP) developed by the Western Pacific Regional Fishery Management Council and approved by the National Marine Fisheries Service (NMFS) the authority of the Magnuson-Stevens Fishery Conservation and Management Act. The NMFS has determined in its Biological Opinion issued in November 2002 through the Endangered Species Act (ESA) that the Hawaii based pelagic longline fishery is likely to adversely affect Leatherback, Loggerhead, Olive Ridley, Green and Hawksbill sea turtles.

Vessels registered with Hawaii Longline Limited Access permits are required to carry observers, when directed to do so by the NMFS to document the incidental capture of sea turtles. The data are used to verify turtle takes as well as seabird and marine mammal interactions.

Longline Observer Objectives

To meet NMFS field responsibilities, the following objectives are established for scientific technicians working as observers aboard longline vessels:

Obtain reliable information about the incidental interaction of sea turtles.

Record fishing effort

Document interactions of other protected species (marine mammals & seabirds)

Record the number of fishes kept and discarded

Process selected species for biological & life history information

Guidelines

With ***SAFETY*** and ***INTEGRITY*** as the watchwords of your job, it is of primary importance that you conscientiously follow the guidelines outlined below:

It is your responsibility to observe and accurately record biological research data as instructed. Everything you record is available to the vessel operator or his designate and is subject to legal interpretation. Almost everything you record may be made available as public information. You are not to record extemporaneous comments or personal opinions. It is not your job to evaluate or interpret data, simply record your observations on the data forms that you are issued.

It is your responsibility to maintain open communication with the vessel operator and other vessel personnel to facilitate a clear understanding as to what data are being collected.

It is your responsibility to advise the vessel operator of all data items recorded. If he or she is in disagreement with you, allow operators to record their views on the original data forms. If they so choose, the vessel operators may record their own comments on these forms.

You are hired to be an observer, *not an enforcement agent*. You are not empowered to write citations, make arrests, or carry out enforcement activities. Your responsibilities require you to make observations and collect data, some of which pertain to federal regulations. There is no guarantee that your data will not be used as evidence to assess penalties. Government attorneys perform legal interpretation.

Your responsibility of observing and recording data is to be performed in such a manner as to minimize interference with fishing operations. Likewise, the vessel operator and any other vessel personnel are not to interfere with your duties.

Responsibilities

Sea-assignment readiness is determined by personal fitness, training preparation and staff assessments.

Alcohol dependency and other illicit drug use are incompatible with observer duties and are not tolerated. If detected, disciplinary action will be initiated.

Observers should not keep personal diaries during a cruise assignment. This does not include materials issued to you for documentation purposes.

Because observer objectives are mandated by federal regulations, personal research is prohibited aboard vessel assignments.

Retaining specimens (especially "edible" specimens) of any kind for any personal reason is prohibited.

Intentionally entering the water from an assigned vessel is prohibited; such activity will compromise personal safety and data collection duties.

Observers do not choose vessel assignments; however **observers have the right to refuse deployment on a vessel they perceive as unsafe.** Management selects sea assignments through a predetermined sampling plan and confirms that the boats meet minimum U.S. Coast Guard safety requirements. Any refusal to board a vessel after an inspection must be documented and discussed with management to determine the appropriate course of action. Fishing activity dictates vessel departures and arrivals. Since vessel notification requirements may limit response time, observers should be prepared for sudden sea assignments of extended and uncertain duration.

An observer's vessel assignment continues until the vessel returns to port to unload.

Never leave your assigned vessel prematurely without approval from the PIR Observer Program Coordinator, Port Coordinator, or acting designate; **to do so is grounds for dismissal.**

Safeguard the return of your data to the port field station. Your work is a valuable investment; treat it like your wallet. **Data loss may be grounds for dismissal.**

Summary of Duties

Employment Purpose

When aboard an assigned longline vessel, observers collect objective and accurate data on the following:

Vessel fishing gear characteristics and operations,
Species composition of the catch,
Incidental catch of protected species, and
Biological (life history), data

SAFETY and **INTEGRITY** continue to be the essential watchwords for observer performance and conduct.

General Duties

Work at sea and on shore

Work under the supervision of the PIRO Administrator and Operations Coordinator

Collect research and management data from the Hawaii longline fisheries

Work at sea aboard longline fishing vessels

Collect data on vessel activity and fishing operations

Identify protected species, target species, and by-catch species

Record the number and position of protected species, target species, and by-catch species caught during fishing operations or sighted during the cruise.

Tally sea turtles observed during fishing activity

Dissect selected species

Record sea turtle life history data and other selected marine species

Review collected data and enter data into the database

The Observer's Role

(adapted from an article by P. Cullenberg and K. Rivera in the OTC Quarterly, vol 8, #3)

Since February 1994, observers have played a role in monitoring interactions between the Hawaii based longline fleet and sea turtles in the north-central Pacific. Starting in 2000, the observer's role expanded to cover more n the issue of seabird bycatch in the fishery as well. The observer program has greatly improved the understanding of what the levels of bycatch and interaction are, and what changes can be made in the fishery for the benefit of fishermen and protected species.

When stepping on to a fishing vessel for one day, one week or one month, you the observer are entering a workplace and a home. It is a place where the crewmen have already established a system of communication and responsibilities. An individual observer's ability to deal with the situation is a reflection of the person's flexibility and resiliancy. The environment can be lonely, unwelcoming, cramped, and sometimes hostile. Your sleeping and eating habits will definitely be disrupted. The quality of your working relationship with the crew can be more important to the overall nature of the trip than the nature of the vessel itself. A good working situation with the crew makes a good trip. A good working situation on a good boat makes a great trip!

A longline observer's job in Hawaii has two important phases. The first is the initial collection of the data at sea. The second is processing and verifying the data on land. At the end of a trip, you'll begin the debriefing phase. This is where the data you collected are reviewed. First by yourself and secondly by a debriefer. As part of the initial reviews, you may be asked questions on species identification, clarification of notes or comments and possibly to document some information for enforcement issues. After the initial checks, you'll enter the data in the Longline Observer Data System (LODS).
Typically the entire debriefing process takes 2-3 days, maybe more after returning from your first trip. It is important no not take the debriefing process personally. Everyone involved wants to make sure the data provided by the observer program are the best as can be.

Some quotes on observing:

"I simply was not prepared to be so cooped up; trapped in such a small place surrounded by cigarette smoke. I hate so sound so dramatic, but this certainly isn't the life for everyone, and I think potential observers need to be aware of this."

–Anonymous, NPGOP observer

"They tell you how hard life at sea is, and the condition you may face, but they never mention how hard of la mental strain it is."

–Anonymous, NPGOP observer

"If you don't like to read, learn to like it. Take the number of books you think you can read, and double it."

–Joe Arceneaux, HLOP observer

Before A Vessel Assignment

Placement Meeting

Before each cruise, observers will meet with the vessel operator to review respective responsibilities. The meeting usually will be led by the Port Coordinator, or acting designate. Occasionally, observers may have to conduct their own placement meetings. After the meeting, observers have the responsibility to place their gear aboard their assigned vessels and to be aboard **at least l/2 hour** before the scheduled departure time**.**

- Observers assigned to a vessel should report to their contractor representative each day until their vessel departs.

- An observer's cruise assignment begins when the vessel leaves port to conduct fishing operations.

During a Vessel Assignment

This list of do's and don'ts is the same list that is reviewed with vessel captains during the placement meetings before each cruise.

Observers are to:

- Collect objective data on vessel activity

- Record catch information on target and non-target species

- Perform their duties in such a manner as to minimize interference with fishing operations.

- Keep open communication with vessel personnel by informing them about observer duties and collected data

- Obtain permission from the vessel captain before using any vessel equipment

- Collect the appropriate specimens as instructed.

- Use issued cameras only for photographing specimens

- Clean up immediately and thoroughly after completing required dissections

- Keep gear and equipment well maintained during sea assignment

- Maintain protective gear. This includes rain gear, boots, hard hat, PFD, Emergency Position Indicating Radio Beacons (EPIRBs), and immersion suits.

- Ask the captain about emergency procedures and familiarize themselves with the locations of life rafts, fire extinguishers, and first aid kits.

- Remain aboard their assigned vessels until the vessels return to port to unload their catch.

- Share housekeeping routines such as dish washing and general clean up with the crew.

Note: It is incumbent upon observers to maintain his or her personal hygiene. Bathe or shower as allowed, recognizing that fishing vessels are often cramped and freshwater for bathing may be in limited supply.

Observers are not to:

★ Compromise data.

 Dictate procedures or direct fishing operations.

 Be involved with crew responsibilities, such as standing watch or helping with fishing procedures.

 Keep personal diaries in any form.

 Bring aboard personal recording devices, or computers of any type.

 Record extemporaneous or personal comments.

 Conduct personal research of any kind.

 Keep specimens or edible fish of any kind.

 Discuss boat business from one vessel to another or to any fishermen on shore. (This includes information on fish catches, locations, and arrival dates.)

Captains are to:

- Cooperate with the observer in the performance of the observer's duties.

- Ensure safe embarking and debarking of the observer.

- Provide observers living quarters comparable to a full crewmember.

- Provide observers with meals, snacks and amenities normally provided to crew members (owners will be reimbursed for observer living expenses, as specified by federal regulations at a rate of $20/sea day).

- Allow the observer access to areas of the vessel necessary to conduct observer duties.

- Allow the observer access to communications and navigation equipment, as necessary to perform observer duties.

- Notify the observer in a timely fashion when commercial fishing operations are to begin and end.

- Provide true vessel locations by latitude and longitude, upon request by the observer.

- Bring aboard marine species affected by fishing operations for biological Processing, upon request by the observer.

- Provide refrigerated bait well storage space for observer collected specimens.

- Record personal statements on the back of the observer's original forms, if they disagree with the observer's collected data.

- Comply with other guidelines, regulations or permit conditions that the National Marine Fisheries Service (NMFS) may develop to ensure the effective deployment and use of observers; and

- Ensure, even for trips with observers aboard, that Daily Longline Fishing Logs are maintained aboard the fishing vessel as required by NMFS.

Captains are not to:

- Ask observers to stand watch or help with fishing operations

- Forcibly assault, harass or sexually harass observers

- Intimidate or attempt to influence observer

- Interfere with or impede observer duties

- Fish without an observer onboard the vessel after the owner or agent of the owner has been directed by NMFS to make accommodations for an observer.

Interference and Harassment

- Record in the Hawaii Longline Observer Program Documentation Notebook, any attempt to interfere with you or your observer work, including harassment, by preparing brief, non-inflammatory answers to **Who, What, Where, When, Why, How and How many times.**

 Harassment is defined as conduct which has the purpose or effect of unreasonably interfering with the observer's work performance, or which creates an intimidating, hostile or offensive environment.

 Federal law defines sexual harassment as "any unwelcome conduct of a sexual nature which has the purpose or effect of substantially interfering with an individual's work performance or creating an intimidating, hostile, or offensive working environment."

Injuries

✪ If you are injured while aboard an assigned vessel, record the details in the Hawaii Longline Observer Program Documentation Notebook. Record the time of the occurrence, the type and extent of the injury, how it occurred, what treatment you received, by whom, and the names of any witnesses.

✪ If you are injured aboard a vessel, you are legally required to notify the captain within seven days of any injury or illness incurred while aboard the vessel.

✪ Make sure to report any injuries or illnesses incurred during a cruise to your employer and your debriefer.

After a Vessel Assignment

 An observer's cruise assignment ends when the vessel returns to port to sell its catch.

➜ Observers are accountable for all data, issued equipment, and manuals. Observer gear should not be left unattended. To avoid being charged for unserviceable gear, return broken and worn out equipment.

➜ **Loss of data is grounds for dismissal.**

➜ After each sea assignment, observers are to complete the following forms:

A. Protected Species Cruise summary.
B. Vessel Reimbursement verification.
C. Post-cruise questionnaire.
*at the conclusion of their first trip, each observer will also fill out first trip training critique-questionnaire.

➜ After a cruise, each observer should ask if there have been changes to the procedures for data editing and entry.

Travel Responsibilities

Always conduct yourself in a courteous and professional manner. When departing from any port other than Honolulu, board your assigned vessel as soon as possible.

Keep your collected data in close possession at all times. **Do not check data as baggage, nor mail original records.**

Remember your data are the result of a significant investment; treat it as you would your wallet; do not entrust it with anyone except program staff.

If you incur expenses during transit to or from your vessel; retain all receipts.

If you encounter any travel delays, contact your contractor or the NMFS Pacific Islands Region Observer Program Office as soon as possible.

No data is better than bad data!

Data Collection Instructions

General Instructions

If the information requested on a data collection form is not available or not applicable, leave the data field or code box blank. Describe the situation in the Documentation Notebook. (Use the Documentation Notebook to describe any situations during the trip that you feel should be recorded when there is no form or designated area for the particular situation.)

Use a soft (No. 2) pencil on all forms. Line out any errors, and write the correct data above.

Print legibly.

Observe and accurately record descriptive and quantitative data with explicit notes and explanations. Record data as events occur, trust nothing to memory.

Record times as four digits using the 24-hour clock, for example, 5:30 P.M. is written as 1730, but 5:30 A.M. is written as 0530. Use Hawaii Standard Time.

Protected species are top priority. Never allow collection of secondary data to interfere with the collection of protected species data.

If data are not available in the proper units, write the measurement and units in the margin or comments section for later conversion, for example, meters from fathoms.

If additional space is required on a data form, continue data entries on additional forms.

Include all pertinent facts when writing notes or narrative explanations. Remember that people who were not present will read about these event(s) you are describing. Don't assume that the readers will automatically *know* what you are describing if you did not write it down.

Photographs

Cameras are to be used for pictures of sea turtles or unidentified birds, fish, or marine mammals. Photograph specimens on deck or at close range when they are out of the water. Photograph **all** incidentally caught sea turtles. Compose photographs so that the vessel and crew remain anonymous.

Cameras without flash must be used in as much light as possible. When taking a photograph with the sun at your back, make sure to frame the photo so that shadows do not fall across the subject. Often it is useful to place a label near the subject to help identify it. Include the trip number, and set number and species in large block letters on a

piece of paper. If it is not possible to include this label with the subject, then immediately preceding that photograph, compose a picture that contains the appropriate label only.

Place the specimen, label and a meter stick or other object for scale against a plain background.

Orient the camera perpendicular to the specimen to obtain a full side view and fill the viewfinder with the specimen, then take the picture. Try to stand at least 3 feet away from the subject. If the animal is too large to fit in one frame, take a shot of the head with the front half of the body, and another of the rear half of the body.

The following types of views are helpful in identifying animals:

Side view (showing dorsal fin if fish, shark, or marine mammal)
Dorsal view
Ventral view
Top of head, close up
Bottom of head, close up
Tail flukes, top & bottom

Avoid oblique angled shots or direct head on views. They may make interesting photos, but they are usually useless for identification purposes.

*Scale objects:

- yard/meter stick
- measuring tape
- tool (deck knife, ice shovel, butcher saw)
- pencil/pen for close-up shots

* line, lumber or deck hoses are bad, because it is often hard to determine their dimensions from the picture.

Check the photos box on the Catch Log and make sure to record the camera and frame numbers on the Photo Log. Write the trip number on the camera label.

Data Collection Priorities

As an observer in the Hawaii longline fishery your primary duty is to obtain reliable information about sea turtle and other protected species interactions. Therefore, a data collection hierarchy has been established and is described below. Observers are expected to know what to accomplish first. If work is interrupted or curtailed, this will help prioritize tasks.

Process animals in the following order of priority:

- Sea turtles
- Seabirds
- Marine Mammals
- Billfish
- Sharks
- Tunas

Sample and Data Collection Priorities

Samples

- Sea turtles, skin biopsies or whole dead animals

- Seabirds, whole - leave any leg bands present on the bird

- Marine mammal skin biopsies

- Selected biological samples from fish, as directed - see Circular Updates.

Data

- Collect & document data from all incidental catches and interactions of protected species. Sea turtles have the highest priority. Seabirds are second, and marine mammals are third.

- Record species composition and disposition of the catch.

- Record fishing locations and gear characteristics.

- Collect fish & shark measurements.

- Describe all incidents where tags are applied, observed, or removed on any caught animal.

Sample Collection General Comments

Make collections only if you have the proper storage medium & space.

It is best to collect a complete set of samples from an individual fish. A complete set of billfish samples includes: anal fin, otoliths, ovary samples, and the full stomach. Shark samples consist only of a tissue sample stored in ethanol or DMSO.

If you are collecting **full stomachs**, they **must be frozen**. Do not store stomachs on ice or in a refrigerator. The proteolytic enzymes remain active and will break down the stomach and its contents.

Specimen Collection Protocol

Refer to the appropriate Circular Update packet and the collection protocols in the Appendix of this field manual.

If resources permit, selectively collect specimens from very large **(**>200 cm EFL) and very small **(**<100 cm EFL) swordfish. It may be easier to collect the entire fish if it is very small.

Comments

Record all specimens & samples collected on the Specimen Log.

Specimen Numbering System

Each sample or specimen collected by an observer will have a unique 12 character specimen number assigned to it. This number, the specimen number, is composed of the *Trip Number*, *Set Number*, *Catch Log Form Page Number*. and *Catch Log Form Line Number*. Label each sample and record the information on the Specimen Log.

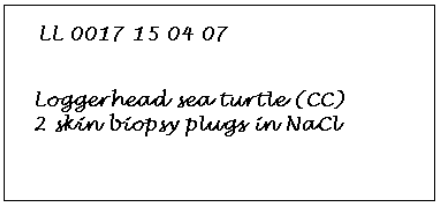
When filling out a specimen tag, include the following:

- Specimen number
- Species common English name
- Species code
- How the sample was stored

See the two examples below.

Example Specimen Tags

Example 1. Loggerhead sea turtle on Trip # LL0017. Set 15, Catch Log Form page 04, line 07.



The specimen number for example 1 is **LL0017150407**

Example 2. Shortfin Mako shark on Trip # LL7745. Set 03, Catch Log Form page 02, line 13.

The specimen number for example 2 is **LL7745030213**

Trip Specifications Record

Introduction

The **T**rip **S**pecifications **R**ecord is used to record the specifics of the fishing trip. It is the only record of the vessel name, permit number and the name of the operator. When separated from other observer data, the data cannot easily be associated with a specific vessel or operator. This form is completed only once for each observed fishing trip.

General Instructions

Most of the information that is recorded can be obtained by direct observation and measurement. However, specifics about some vessel equipment can be obtained by asking the operator. This form can be completed throughout the trip to allow the observer ample time to ascertain the information.

Data Elements

Observer ID - in the upper left corner of the form, fill in the spaces with the Observer ID number assigned to you during training.

Trip Number - in the upper right corner, enter the unique six-character number assigned by the Operations Coordinator. In the first two blocks enter **LL** for longline. Starting in the third block, enter the four-digit number.

Manual Version – in the upper right corner of the form, fill in the spaces with the Manual Version number. It can be located on the title page of the manual. The first two characters are **LM** for longline manual.

Documentation Number - the 6 to 7-digit number (is) assigned to the vessel by the US Coast Guard. It is painted on the sides of the pilothouse, the stern and both sides of the bow.

Vessel Name - print in block letters the name of the vessel as it appears on the bow, transom or official records. It is not necessary to precede the vessel name with F/V "fishing vessel."

Vessel length - the overall length of the vessel in feet. This value can be retrieved by the debriefers from the USCG if you can not find the correct length documented.

Operator Name - print in block letters the first name, middle initial and last name of the person responsible for operation of the vessel. If the operator has no middle name, then write "(NMI)" for *No Middle Initial,* after the operator's first name. Ask the person to confirm the spelling.

Departure Date - the date the vessel first departed for the fishing area. Use two digits for the day. Write the first three letters of the month (*ex.* JAN, FEB, MAR). In the last two spaces, write in two digits representing the year. Example; August 15th, 2003 would be recorded as 15 AUG 2003.

Time - the time that the vessel first departed for the fishing area. Use Hawaii Standard Time and the 24-hour clock.

Port of Departure - print in block letters the name of the port city the vessel departed from, e.g., Honolulu.

Intermediate Port Stops - occasionally, some trips will include port stops for reasons other than to unload the catch. If your assigned vessel makes a port stop, complete the required lines in the section. Sometimes a vessel will leave from the pier to tie up in another part of the port to take on ice, bait or other supplies. These stops should not be considered port stops. As a rule a stop is considered a port stop if the vessel has been out of the harbor for more than 30 minutes before returning. If no port stops are made, draw a diagonal line through this section.

Stop No - record a single digit indicating the number of the port stop starting with **1**.

Port Stop Date - the date the vessel returned to any port for any reason other than the end of the trip. Use the standard date format (e.g., 24 JUL 2003).

Time - the time that the vessel returned to port for any reason other than the end of the trip. Use Hawaii Standard Time and the 24-hour clock with two digits for the hour and two digits for the minutes.

Date Cruise Resumed - the date that the vessel departed port after Port Stop 1 to resume fishing.

Time -the time that the vessel departed port after Stop 1 to resume fishing.

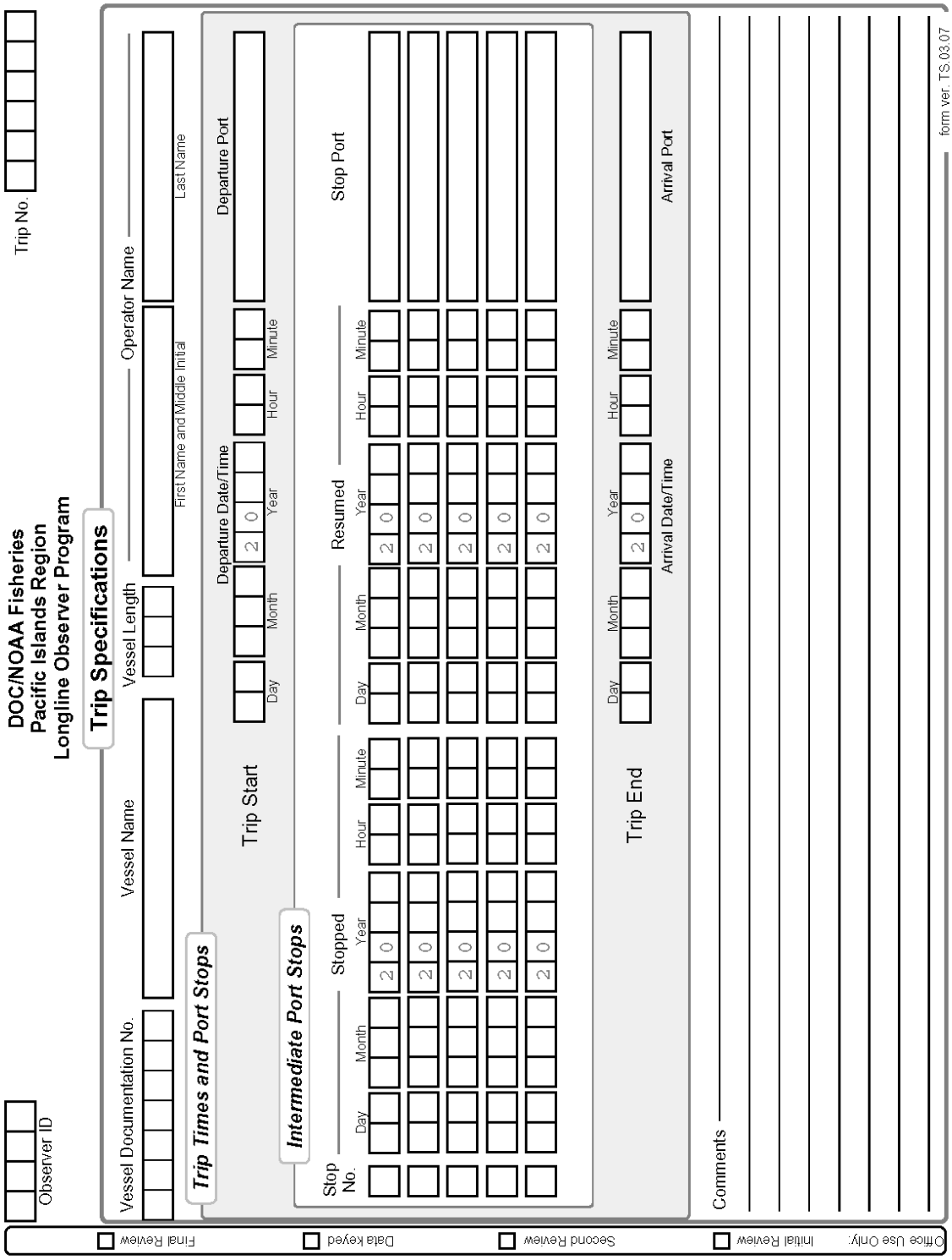
Arrival Date - the date the vessel returns to port after completing the fishing trip.

Time -the time that the vessel returns to port after completing the fishing trip.

Port of Arrival - print in block letters the name of the port city the vessel returned to, *e.g*., Honolulu or San Pedro.

Comments - use this section to explain details of port stops or to record information not included in the data boxes.

Trip Specifications



Longline Set & Haul Information

Introduction

The Longline Set and Haul Data form is used to record the basic set and haul parameters of longline sets on observed trips.

General Instructions

The information necessary to complete this form is obtained through direct observation. If the information for any data elements is not available or applicable, leave the field(s) blank and describe the situation with notes on the back of the form. If additional space is needed for notes, use extra paper.

The incidental take of protected species is extremely important to the management of this fishery. **Observers must observe the entire haul back (gear retrieval process).**

Data Elements

Form Header

Observer ID - in the upper left corner of the form, fill in the spaces with the Observer ID number assigned to you during training.

Trip Number - in the upper right corner, the unique six-digit number assigned by the Operations Coordinator. In the first two blocks enter **LL** for longline. After the second block, enter the four digit number.

Set Number - sets are numbered consecutively for each observed trip beginning with 01.

Log Book Page Number - record the page number from the *NMFS W. Pacific Daily Longline Fishing Log* that the captain uses to report the catch for this set. **Note:** Right justify and do not use leading zeros.

Set Information Block

Begin Set

Date - the date when the setting operations start (the first piece of gear goes into the water.) Use the standard date format

Time - record the time when the setting operations start. Record times using the 24 hour clock and use Hawaii Standard Time.

Latitude - the latitude of the vessel at the beginning of the setting operation. Enter *degrees, minutes and tenths of minutes*. Obtain positions from the GPS unit on the vessel. Enter **N** in the trailing block for the Northern Hemisphere, and **S** for the Southern Hemisphere.

Longitude - the longitude of the vessel at the beginning of the setting operation. Enter *degrees, minutes and tenths of minutes*. Obtain positions from the GPS unit on the vessel. Enter **E** in the trailing block to indicate east longitude and **W** for west longitude.

Weather Code - record the two digit number representing the weather conditions at the beginning of the setting procedure.

Beaufort - record the Beaufort Scale number 0 - 10 describing sea conditions at the beginning of setting operation. A wind of a given speed blowing for a sufficient time over a sufficient surface area of water (fetch) produces a characteristic appearance of the sea's surface. The Beaufort Scale describes the characteristic appearance of the sea associated with each numerical level of the Scale. Refer to the reference tables in your manual and on bottom of the form.

In-situ Surface Temperature – Record the sea surface temperature as a 3 digit number in the Fahrenheit scale to the nearest 0.1 degree. Use the vessel's thermistor (thermometer probe). If the vessel does not have a working thermistor, use the issued back-up thermometer.

When using a back-up thermometer, follow these steps. Cast the water collecting container overboard into water which is least affected by external heating from the vessel. Capture enough water to fill the well and insert the thermomter. Allow time for the thermometer to equilibrate before recording the temperature, roughly 10 seconds.

End Set

Date - the date when the setting operations ended (the last piece of gear was put into the water). Use the standard date format.

Time - record the time when the setting operations ended. Record times using the 24 hour clock and use Hawaii Standard Time.

Latitude - the latitude of the vessel at the end of the setting operation. Enter *degrees, minutes and tenths of minutes.* Obtain positions from the GPS unit on the vessel. Enter **N** in the trailing block for the Northern Hemisphere, and **S** for the Southern Hemisphere.

Longitude - the longitude of the vessel at the end of the setting operation. Enter *degrees, minutes and tenths of minutes*. Obtain positions from the GPS unit on the vessel. Enter **E** in the trailing block to indicate east longitude and **W** for west longitude.

Weather Code - record the two digit number representing the weather conditions at the end of the setting procedure.

Beaufort - record the Beaufort Scale number 0 - 10 describing sea conditions at the end of setting operation. Refer to the reference tables in your manual and at the bottom of the form.

In-situ Surface Temperature – Record the sea surface temperature as a 3 digit number in the Fahrenheit scale to the nearest 0.1 degree. Use the vessel's thermistor (thermometer probe). If the vessel does not have a working thermistor, use the issued back-up thermometer.

Haul Information Block

Begin Haul

Date - the date when the haul back operation is begun (the first piece of gear was pulled out of the water). This is almost always a radio buoy, and is considered *Float no. 1* for counting purposed on the catch record. Use the standard date format.

Time - record the time when the haul back operation is begun. Record times using the 24 hour clock and use Hawaii Standard Time.

Latitude - the latitude of the vessel at the beginning of the haul back operation. Enter *degrees, minutes and tenths of minutes*. Obtain positions from the GPS unit on the vessel. Enter **N** in the trailing block for the Northern Hemisphere, and **S** for the Southern Hemisphere.

Longitude - the longitude of the vessel at the beginning of the haul back operation. Enter *degrees, minutes and tenths of minutes*. Obtain positions from the GPS unit on the vessel. Enter **E** in the trailing block to indicate east longitude and **W** for west longitude.

Weather Code - record the two digit number representing the weather conditions at the beginning of the haul back procedure.

Beaufort - record the Beaufort Scale number 0 - 10 describing sea conditions at the beginning of haul back operation. Refer to the reference tables in your manual and on the back of the form.

In-situ Surface Temperature – Record the sea surface temperature as a 3 digit number in the Fahrenheit scale to the nearest 0.1 degree. Use the vessel's thermistor (thermometer probe). If the vessel does not have a working thermistor, use the issued back-up thermometer.

End Haul

Date - the date when the haul back operation is ended (the last piece of gear was pulled out of the water). Use the standard date format.

Time - record the time when the haul back operation is ended. Record times using the 24 hour clock and use Hawaii Standard Time.

Latitude - the latitude of the vessel at the end of the haul back operation. Enter degrees, minutes and tenths of minutes. Obtain positions from the GPS unit on the vessel. Enter **N** in the trailing block for the Northern Hemisphere, and **S** for the Southern Hemisphere.

Longitude - the longitude of the vessel at the end of the haul back operation. Enter *degrees, minutes and tenths of minutes*. Obtain positions from the GPS unit on the vessel. Enter **E** in the trailing block to indicate east longitude and **W** for west longitude.

Weather Code - record the two digit number representing the weather conditions at the end of the haul back procedure.

Beaufort - record the Beaufort Scale number 0 - 10 describing sea conditions at the end of haul back operation. Refer to the reference tables in your manual and on the bottom of the form.

In-situ Surface Temperature – Record the sea surface temperature as a 3 digit number in the Fahrenheit scale to the nearest 0.1 degree. Use the vessel's thermistor (thermometer probe). If the vessel does not have a working thermistor, use the issued back-up thermometer.

Set / Haul Events

Haul Back Direction Code - enter the appropriate two digit code to indicate from which end the gear was hauled from. If the haul back commences more than five (5) floats from an end, select 03. Other, and describe the float number and situation in the Comments section.

Line Parted? - place a check or X in the box if the mainline unintentionally parted while the gear was hauled.

No. Section Retrieved - if the mainline parts, enter the number of pieces that were hauled back. For example, if the mainline parts one time, then you would enter 02 to indicate that two sections of mainline were hauled back. If the line parts 2 times record 03 in the number of sections hauled back. It is always one more section hauled back than the number of times the mainline parted.

Set Interaction? - place a check or X in the box if you observed a protected species interaction during the observed portion of the set. If there was an interaction, make sure to record the details in the Protected Species Event Log.

Haul Interaction? - place a check or X in the box if there was a protected species interaction with the gear during the haul back. If there was an interaction, make sure to record the details in the Protected Species Event Log.

Comments - use this section to describe any particulars that could not be codified from the available data element choices. If any data elements were left blank, record what was left blank and why the information could not be collected, in this section. If you run out of room, indicate that there are notes on the back, and continue on the back of the form,

Weather Code Table

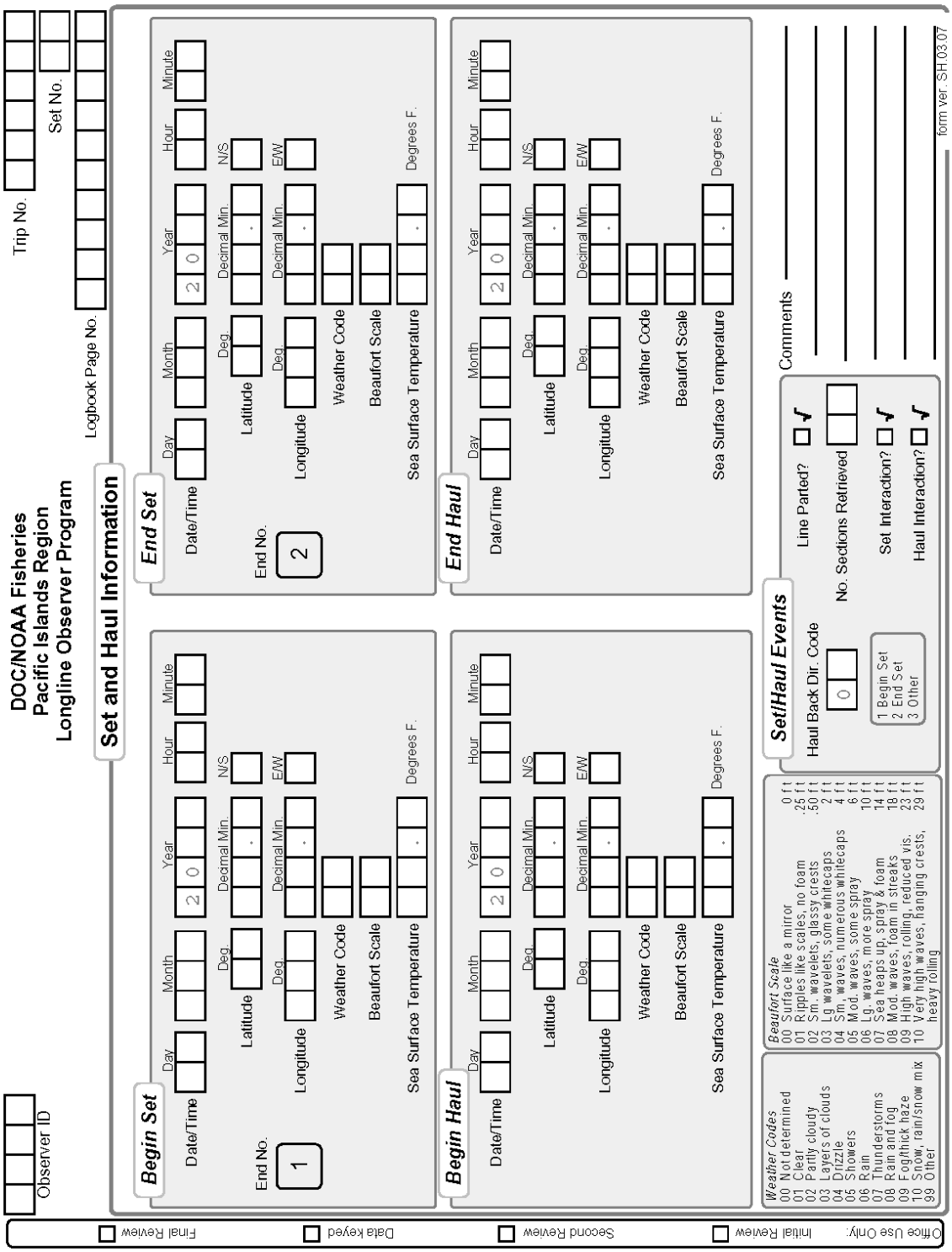
00 Not determined	06 Rain
01 Clear	07 Thunderstorms
02 Partly Cloudy	08 Rain & Fog
03 Cloudy (one or more layers)	09 Fog/Thick Haze
04 Drizzle	10 Snow, or rain/snow mix
05 Showers	99 Other

Beaufort Chart

Sea Surface State	Beaufort	Wind Speeds	Wave Height
Surface is like a mirror.	0	Calm	0 ft
Ripples with the appearance of scales, no foam.	1	1-3 kts	¼ ft
Small wavelets, glassy crests, not breaking.	2	4-6 kts	½ ft
Large wavelets, crests break, some scattered whitecaps.	3	7-10 kts	2 ft
Small waves, becoming longer, numerous white caps.	4	11-16 kts	4 ft
Moderate waves, longer form, many white caps, some spray.	5	17-21 kts	6 ft
Larger waves forming, whitecaps everywhere, more spray.	6	22-27 kts	10 ft
Sea heaps up, white foam from breaking waves blown into streaks.	7	28-33 kts	14 ft

Moderately high waves of greater length, edges of crests break into spindrift, foam is blown in well marked streaks.	8	34-40 kts	18 ft
High waves, rolling starts, Foam in dense streaks spray may reduce visibility.	9	41-47 kts	23 ft
Very high waves with over hanging crests, sea takes on white appearance, foam is blown in dense streaks obscuring visibility, heavy rolling.	10	48-55 kts	29 ft

Set and Haul Information Form



Gear Configuration

Introduction

The ***G**ear **C**onfiguration* form is a record of longline fishing gear characteristics. The data on this form are used to describe specific parts of the gear. Vessels may occasionally change or alter their gear according to local conditions. This data can be used with other observer collected data elements to determine the affects on the catch of protected species as well as target species.

General Instructions

This form should be filled out before fishing operations begin. Most of these elements are obtained thorough direct observation or measurement by the observer. There are a few elements with "Reported" in their name. Ask the captain, crew or check the packaging labels for these.

Data Elements

Observer ID: In the upper left corner of the form, fill in the spaces with the Observer ID number assigned to you during training.

Trip Number: Record the number of the cruise.

Set Number: Record the number of the set.

Hooks & Floats Block

No. of Floats: Record the number of floats used on this set to suspend the gear in the water column. Radio buoys are considered floats and counted the same as the other floats. Occasionally some crews will connect 2-3 floats together. In these cases, all the connected floats would be counted as one.

Hook Type: Select the appropriate code indicating the predominant style of hook used in this configuration. If the code is 06. Other, describe the hook in the Comments section. If possible, ask for a hook as an example. If more than one hook style is used, record the predominant and describe the hook types used in the Comments section.

Hook Size: Record the size number of the hooks used. Ignore "ought" designations. For example a 9/0 hook would be entered as 09. Some hooks may have a metric measurement, such as 3.8mm. Ignore the decimal point, and enter the size as 38.

Hooks/Float: Record the typical number of hooks deployed between the floats. Count several floats (baskets) of gear during the set to find the predominant number.

No. Hooks Set: Count and record the number of hooks deployed on the set. The best way to get this number is to count all the hooks/branch lines in the boxes before the setting operations start. Once the setting is completed, count the remaining hooks/branch lines and subtract from the first count.

Fishing Techniques

Reported Target Depth: Ask the vessel operator how deep he wants the deepest part of the gear to fish. The units for this are meters. If the operator gives you the depth in fathoms, refer to the conversion formulas in the Appendices. (1fm = 1.82m) If you have to convert fm to m, make sure to include this in the Comments section of the form .

Target Species Code: Enter the three-digit code from the Species Code List on page 97 of this field manual.

Name: In the box labeled Name, print the English or common name of the target species. Use the names from the code list on page 93.

Bait Code: Enter the two-digit code from the list to indicate which bait was used on this set. Small squid (code 02) are 4-7" long calamari sized squid. If the bait code is 05. Mixed, or 06. Other; describe in the Comment section, what the bait was, and approximate amounts or percentages.

Examples: - *Mixed bait, 60/40 sanma-sardines*
- *9 cases sanma 1 case sm. squid.*

Light Devices Block

Type Code: Enter the two-digit code representing the type of light device, if any, attached to the gear to help catch fish. This does not cover strobes or other lights attached to floats or radio buoys. These lights are used to help locate the gear if the mainline parts. If use code 03, *Other*, describe with notes in the Comments section. If use code 00, *None,* leave the *No. Devices* and *Color Code* elements blank. Some vessels use small glow-in-the dark plastic wedges near the hook on the branch lines to help hold the wire leader loop open. These are not considered light devices and should not be counted as such.

No. Devices: Record the number of light devices deployed on this set.

Color Code: Record the color light the devices emit. If use code 08, *Mixed*, describe the colors used and approximate percentages on the Comments section of the form.

*For the following elements, fill these out for the first set. If the values of the succeeding sets don't change, then leave blank, and check the "No Change" box in each section. If something does change, then complete the section with the element that changed.

Mainline Block

Material Code: Select the appropriate code. If the code is 3. Other, describe the material with notes, and collect a short sample if possible.

Diameter: Record the diameter of the mainline to the nearest tenth of a millimeter (0.1mm). Use vernier calipers for this measurement.

Reported Length: Record the length of mainline actually deployed on this set. Ask the vessel operator for this value. Do not use the plotter or coordinates to figure out distance between the two ends of the set.

Reported Test: The test strength of the mainline material in lbs. Ask the captain or try to determine this from the package.

No. of Strands: Record the number of strands of material the mainline is woven or braided from. Occasionally a vessel may have several long pieces of mainline tied together. Do not count them to find the number of strands.

Color: Select the appropriate code indicating the color of the mainline. If the code is 9. Other, describe in the Comments section of the form.

Float line Block

Select examples of typical float lines used on this set. If the floatlines used are of different materials, record the materials used (write the names of the materials & the codes) on the Comment Log. There can be expected to be some variation. For the measured data elements, measure three typical float lines and take the average.

Material Code: Select the appropriate code. If the material code is 03. Other; describe the material with notes, and collect a short sample if possible.

Diameter: Record the diameter of the mainline to the nearest tenth of a millimeter (0.1mm). Use vernier calipers for this measurement.

Measured Length: Record the length of the float line to the nearest tenth of a meter. Measure the line from end to end without a float attached to it. Use the 2m calipers.

Branch Line Block

Select examples of typical branchlines used on this set. If the branchlines used are of different materials, record the materials used (write the names of the materials & the codes) on the Comment Log. Some variation in the construction of branchlines can be expected. For the measured data elements, measure three typical branchlines and take the average.

Material Code: Select the appropriate code. If the material code is 3. Other; describe the material in the Comments section of the form, and collect a short sample if possible.

Diameter: Record the diameter of the mainline to the nearest tenth of a millimeter (0.1mm). Use Vernier calipers for this measurement.

Measured Length: Record the length of the branch line to the nearest tenth of a meter (0.1m). Measure the line from the top of the snap to the leader. If there is a weighted swivel (weight) between the branch line and the leader; measure to the "hook side" of the weight. Use the 2m calipers to obtain this measurement.

Color: Select the appropriate code indicating the color of the branch line. If the color code is 9. Other; describe with notes and collect a small sample of possible.

Reported Test: The breaking strength of the branch line in pounds. Ask the captain or try to determine this from the package.

Leader Material Block

Select examples of typical leaders. If the leaders used are of different materials, record the materials used (write the names of the materials & the codes) on the Comment Log. There can be expected to be some variation. For the measured data elements, measure three typical float lines and take the average.

Material Code: Select the appropriate code. If the material code is 3. Other; describe the material in the Comments section of the form, and collect a short sample if possible.

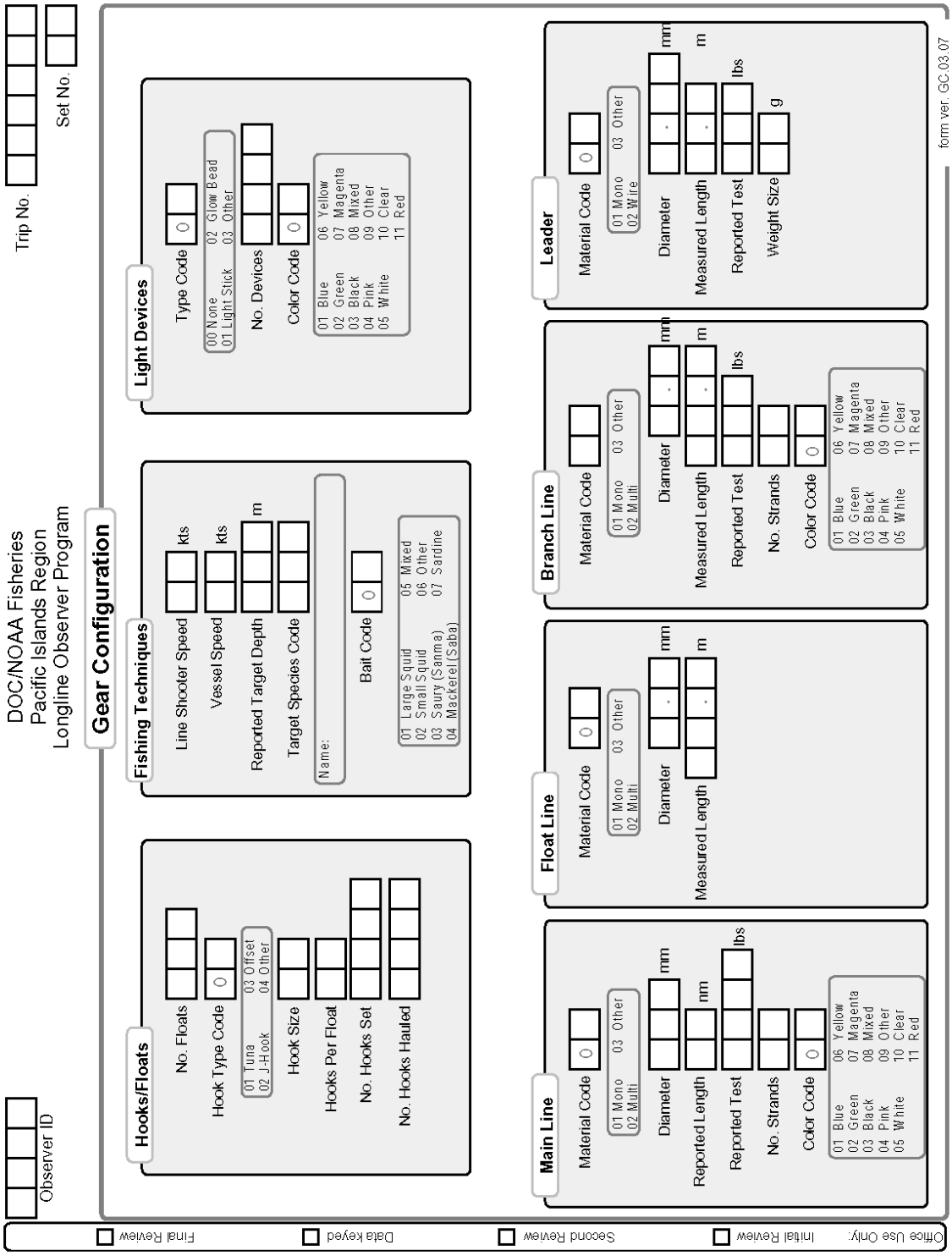
Diameter: Record the diameter of the mainline to the nearest tenth of a millimeter. Use Vernier calipers for this measurement.

Measured Length: Record the length of the leader to the nearest tenth of a meter. Measure from the eye of the hook to end of the leader, usually to the weight.

Reported Test: The breaking strength of the leader material in lbs. Ask the captain or try to determine this form the package.

Weight Size: Record the predominant size of the weights used, in grams. If weights of different size are used, describe the weights used in the Comments section of the form.

Gear Configuration Form



Protected Species Event Log

Introduction

The ***P**rotected **S**pecies **E**vent **L**og* is for observers to collect data describing the nature and numbers of protected species observed in association with longline fishing operations. This form provides a means to record data from the three main types of events. They are Approaches, Contacts and Sightings.

For Approaches and Contacts, only use this form when you physically see the event occur (*e.g.* a sea turtle becoming hooked or entangled, or a bird diving on the bait). Sightings can be either by the observer, vessel crew or both.

Approaches: Events when the animal is observed coming closer to the vessel or gear from its initial observation.

Contact: Events where the animal is observed to come into contact with the gear. Contact with bait or catch that is on a hook is considered as a gear contact. Animals observed becoming hooked or entangled in the gear are considered as "catch-contacts" counted as "contacts" on this form. Data from these "caught" (catch-contact) animals would then be completed on the Catch Log.

Sighting (& behaviors): Descriptions of the animal's activity that do not involve contact with the fishing gear.

Special Notice For Short-tailed Albatross Observations

Do not record seabird sightings over 150m, EXCEPT for Short-tailed Albatross.

Short-tailed Albatross observations are a high priority.
RECORD ALL SHORT-TAIL SIGHTINGS NO MATTER HOW FAR AWAY!
If you see one, try to get a photo!

General Instructions

Observations of protected species can be separated into a series of steps based on changes in the behavior or condition of the animal of the animal(s). A single event may include such steps as: 1. The initial observation & approach. 2. The observed arrival & investigation. 3. The observed contact with the fishing gear. All steps would have the **same overall Event No**., but each step would have a **different Event Type Code**.

Incidents that are clearly separated by relatively long periods of time should be considered as separate events.

This form allows observers to record information from a group of animals or a single individual. A group is defined as an association of animals behaving in a similar or unified manner. Groups may contain several different species of animals engaged in similar

behaviors such as a mixed pod of dolphin species traveling as a cohesive group in the same direction.

When the observed behavior of the animal significantly changes, fill out a new line of data. Significant changes include things like changes in direction and speed of the animal(s), distance from the vessel or gear, a group splits up, several individuals form a group, or when an animal comes into contact with the gear or catch.

Defining an event can be very subjective at times, especially if animals are moving between groups or groups are splitting and fusing.

Special Notice For Seabird Observations

Often albatrosses or a mixed flock of many seabird species will be observed flying around or circling the vessel and/or gear for long periods of time. During the observation period additional birds may join the flock. During these instances; it is acceptable to note the time & position of the first observation, the time; and position if possible; of when you ceased observing the seabirds, and the final total number of seabirds of each species. The entire flock should be handled as a single entity.

Each species of a mixed flock would get it own line, and be assigned the same Group number of the flock. Each species of a mixed flock would be assigned the same start date, time, and position. In these instances, it is only necessary to record the position for the first species (line of data) recorded for the flock. As long as each species in the mixed flock has the same Group ID number, the Event only requires one End Event line.

Separate flocks could be considered one Group and one Event, or several flocks over the course of a day could be grouped together into a single Group and Event.

Incidents of individual seabirds observed making contact (becoming hooked or entangled) with the gear should be recorded separately from the data describing the behavior of the flock. These birds should be assigned different Group/Individual ID number as well as Event number. All information should be filled out on the lines describing instances of gear contact.

During the setting of the longline, record protected species that are observed injured (hooked or entangled) or killed on this form.

During longline retrieval, when a protected species individual is observed becoming hooked or entangled; record the steps up to the hooking/entanglement on a Protected Species Event Log and then the information about the catch/entanglement on the Catch Log.

Note: If you did not actually observe the animal <u>becoming</u> hooked or entangled during gear retrieval, do not record the information on this form. In that case, the data would be entered on the Catch Record and the appropriate biological data form.

Data Elements

Observer ID: In the upper left corner of the form, fill in the spaces with the Observer ID number assigned to you during training.

Trip Number: The unique six-digit number assigned by the Operations Coordinator. In the first two blocks, record **LL** for longline. After the second block, enter the four digit sequential number of the trip.

Protected Species Event Log Page No.: Begin with page 01 on each observed trip.

Page No.: Enter the page number, as on this Protected Species Page No., for every line that contains data.

Line No.: This element should be pre-filled.

Event No.: Enter a sequential number for each separate event recorded. The first event observes is numbered 01.

Date/Time: The date and time the event occurred. Use the standard date and time formats (e.g., 24 JUL 2003).

Group/Individual ID: A number to designate the group or individual. If a group splits apart, each sub-group would then be entered onto its own line with a different Group/Indiv. ID.

Event Type Code: Enter the letter code that describes the type of event.

Event Type Code List

B = Behavior
A = Approach.
C = Contact.
X = Event ended

Every event will end with an *Event Type Code* of X. After entering X in the Event Type Code Box, no additional information is required for the line. (In other words, it all ends after the X.)

Vessel Activity Code: Record the activity of the vessel at the time of sighting:

Vessel Activity Code List

01 = Gear Retrieval.
02 = Gear Set.
03 = Gear Drift/Soak. Use only if gear is in the water.
04 = Pre-Set Prep. Crew is preparing the vessel and gear for setting operations.
05 = Post Haul Clean-up. Crew are cleaning up and reorganizing the fishing gear after

the last piece of gear is on board.
06 = Running/traveling while the gear is onboard the vessel
07 = Other

Set Number: Record the set number if the vessel activity is setting, soaking, or retrieving. Sets are numbered consecutively for each observed trip beginning with 01. This number should be the same as on the Set & Haul Data form for this set.

Sighting Method: Enter the code that indicates the method by which you first became aware of the event.

Sighting Method Code List

00 = Undetermined. (for legacy & historical data considerations)
01 = Naked eye.
02 = Binoculars.
03 = First sighted by captain/crew, then by observer.
04 = Sighted by captain/crew only.
09 = Other.

Latitude & Longitude: Record the vessel's coordinates from the GPS receiver or plotter at the time of the sighting. Record the minutes to the nearest tenth. If you are unable to obtain the coordinates right away, record them as soon as you are able.

You may encounter a situation where there are many changes in behavior in a short period of time. In a case like this, record the initial position and leave the positions in the following lines blank.

Direction N/S: Indicate the hemisphere of the latitude. North = **N**, South = **S**.

Direction E/W: Indicate the hemisphere of the longitude. East = **E**, West = **W**.

Weather Code: Enter the appropriate code that describes the weather.

English Name: Enter an abbreviated common name of the species. There is a list of the common species encountered with abbreviations on the bottom of the form. If you encounter a species that is not listed here make up an abbreviation of the common name that is clear to you .

Species Code: Enter the 2 or 3 letter code indicating the species code from the Species Code list in the Appendices.

Behavior Code: Indicate the activity of the animal(s).

Behavior Code List

Contact:

01 = Contact. The animal was observed making contact with any part of the gear (incl. hooked bait). Animals observed becoming hooked or entangled get this code and are also recorded onto the Catch Log.
02 = Attempt, no contact. An observed unsuccessful attempt to steal / feed on hooked bait or catch. No observed contact with the gear.

Approach:

03 = Near gear (or vessel), within 50m.
04 = Distance, 51 to 150m.

Behavior:

05 = Feeding on catch.
06 = Porpoising - splashing along the surface, breaking the surface regularly, large portions of the body visible.
07 = Bow riding: animal(s) are observed keeping pace with the vessel in front of the bow wave.
08 = Breaching: jumping out of the water and crashing down on flank, belly.
09 = Swimming at surface, not porpoising.
10 = Milling: the animal(s) are resting at the surface and are moving about very slowly. Do not appear agitated or excited.
11 = Motionless: at surface
12 = Avoidance: the animal(s) suddenly change behavior or direction of movement to avoid the vessel.
13 = Vessel attraction: the animal(s) suddenly change behavior or direction of movement and approach closer to the vessel than the initial sighting distance.
99 = Other.

Condition Code - Select the code that represents the state of the animal at the end of the phase you are recording on the line. There can be one condition code per line. A change in the condition necessitates a new line.

Condition Code List

02 = Alive, not injured: The animal(s) of this species involved in this event that are alive & uninjured.

03 = Injured: The animal(s) of this species that are injured at the end of this event. The **Behavior code** of injured animals must be 01.

04 = Killed. The animal(s) of this species that are clearly dead at the end of this event, when the interaction does not occur during gear retrieval.

05 = Dead, fresh: The animal was dead when first observed, and appears not to have died as a result of fishing operations. The *Behavior code* of dead animals can only be 01, 04, 05, 06, or 12.

06 = Decomposed. The animal was dead and exhibiting signs of decay when first observed.

Species Count Block

Low Estimate: Record your low estimate of the number of individuals of this species present (four digits).

Best Estimate: Record your best estimate of the number of individuals of this species presents (four digits).

High Estimate: Record your high estimate of the number of individuals of this species present (four digits).

Sketch: Place a check mark or X in the box if you drew a sketch of the animal(s) or incident.

Photo: Place a check mark or X in the box if you took a photo of the animal(s). Make sure to record the details on your photo log.

Comment: Place a check mark or X in the box if there are comments/notes.

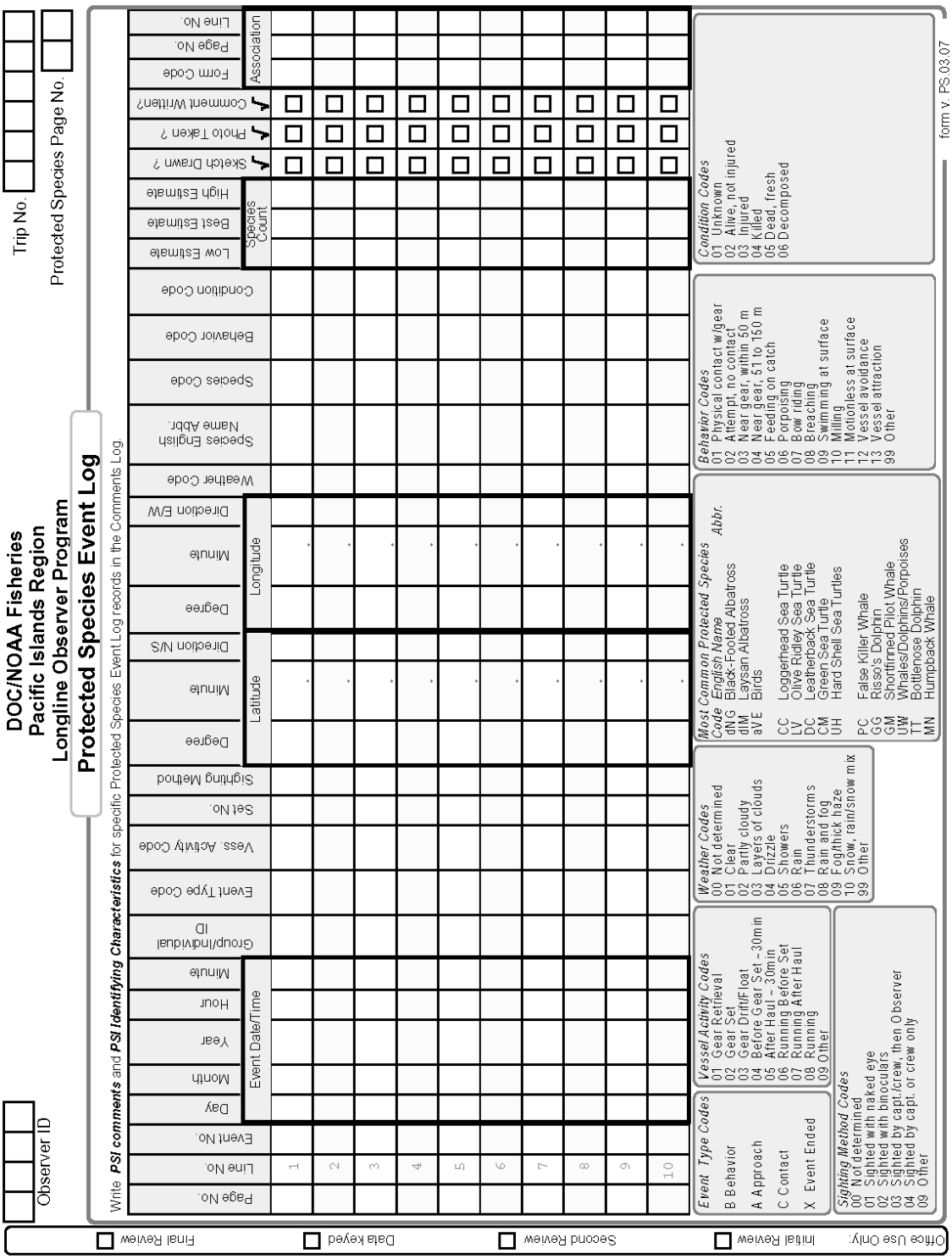
Association Code Block

The elements in this section indicate which other forms may relate to this event. For example, after an animal is observed becoming hooked, the form code CL element will indicate that the capture information is in the Catch Log. If the event on this line follows a previous line, the form code PS indicates that there is another preceding event on this form.

Form Code: A two-letter abbreviation of each form title. It can be found in the lower right corner of each form.

Page No., Line No.: The page and line number of the form that contains the related information to this event.

Protected Species Event Log Form



Protected Species Collection Requirements

Sea Turtles

Observers are to request, from vessel personnel, that **any dead sea turtles** encountered during a cruise be **retained** after processing for return to Honolulu. Very large sea turtles, i.e., full-grown Leatherbacks, may present problem with handling and storage on board the vessel until the end of the cruise. Dead turtles too large to bring aboard or store in the vessel's hold space may be returned overboard after all samples, measurements, and photographs are taken.

When a sea turtle comes aboard dead and will be brought back to port:

Leave any entangled line or hook in place and cut the line leaving about 2 feet remaining.

Leave all existing tags in place.

Take photographs of identifying characteristics.

Complete the information on the Catch Event Log and Sea Turtle Biological Data From. Thorough, detailed notes should be recorded on the Comment Log.

Notify Observer Program via SSB as soon as you can, that you are returning w/ a whole turtle.

Note: use the appropriate specimen codes when reporting on the SSB.(USE NO COMMON NAMES).

Fill out USFWS 3-177, two (2) copies. Fill out CITES Import Forms, one (1) copy.

Double bag and store frozen, if possible, for return to the PIRO Longline Observer Program.

Seabirds

Observers are to request, from vessel personnel, that **any dead albatross** encountered during a cruise be **retained** after processing for return to Honolulu. The albatross must be frozen. If there is inadequate freezer space, do not collect the albatross, unless it is a Short-tailed albatross. If the vessel doesn't have enough freezer space for the birds, return them to the sea after recording and photographing all of the necessary information.

When an albatross comes aboard dead and will be brought back to port:

-Turn the bird upside down, and drain as much water from the mouth as possible. Then pat the bird dry with a towel, taking care not to damage the feathers.

-Attach a specimen tag to one of the legs. Assign the bird a specimen number.

-Stuff four (4) pieces of cotton into the mouth and throat to keep the stomach juices form fouling the feathers.

-Close the albatross' bill with a rubber band, string or cable tie.

-Fold the head & neck so that it lays against the side of the bird.

-Fold or tuck in the feet of the bird as much as possible to protect the bones from damage.

-Carefully place the bird, head first, into the heavy duty plastic bag provided for the purpose. Use a cable tie to secure the package, and roll any excess bag around the bird to make a neat package. This will prevent further damage to the bird.

-Then place the bagged bird into a second bag. Close this bag with a cable tie and attach a copy of the original specimen tag to the outside of the bag.

Important: Upon arrival in port, contact the NMFS PIRO to arrange pickup and transfer of your specimen. Make sure when you fill out the USFWS IMPORT Form 3-177, you use the one specifically for birds. Check the upper left, it should say "For Birds."

Cetaceans

Observers should try to collect a skin biopsy from all cetaceans (whales & dolphins) incidentally captured during a cruise. Refer to the protocols in the Appendices on page 109 of this manual.

Protected Species Sketches

Fill out a sketch form for each protected species event observed.

Identifying Characteristics: List all of the characteristics you saw which led to your identification of this species. Animals may sometimes be observed for only a second or two. Try to mentally note as many characteristics as you can, and record them as soon as possible while they are fresh in your mind.

Some characteristics such as scute counts of a sea turtles carapace are "stronger" or more reliable for identification purposes than others. Because of the importance of protected species in managing this fishery, good identification of protected species is necessary. A combination of **five (5)** characteristics is required in most cases to substantiate the identity of a protected species. Examples of characteristics include approximate body length, body color and color patterns, body size, fin size and location, and behavior. For some animal species, a single diagnostic feature is sufficient to identify the observed animal. Examples of are the long pectoral flipper of the Humpback whale, the ridged skin covered carapace of the Leatherback sea turtle, or the white eye patches and chin of the Orca.

Examples of Poor Notes and Descriptions

"I knew it was a Bottlenosed dolphin because it looked like one."

"It had a dark colored body with darkish color all over."

"There were four albatrosses following the boat. One of them seemed like it was different from the first one."

Sketch Identifying Characteristics: Sketch the animal using the identifying characteristics you observed to make your species identification.

Seabird Mitigation Techniques

Introduction

The ***S**eabird **M**itigation **T**echniques* form is used to record the mitigation techniques employed by the vessel during setting and retrieval operations.

General Instructions

The mitigation techniques are recorded both during the set and the haul of the longline gear. Observers are required to observe at least the beginning of the set and the entire gear retrieval.

Data Elements

During Set Block

Deterrents Used: Place a checkmark or X in the appropriate box for each deterrent used during the setting of the longline gear.

Number of Floats Observed: Record the number of floats you watched set out during the setting of the longline gear. If set is made during daylight hours, try to observe a minimum of 10% of the floats. Use leading zeros as necessary.

Night Setting: The **Begin Set** time is **at least <u>one hour after</u> the setting of the sun**, and the set must have been completed at least one hour before sunrise.

Towed Buoy: A buoy or other floating object towed behind the vessel where baited hooks are deployed during the observed portion of the set.

Tori Line: A line approximately **150m** with intermittent swivels and streamers towed behind the vessel that covers the area where baited hooks are deployed during the observed portion of the setting of the longline gear. Note in the comments if the line did not completely cover the gear.

Line Shooter Used: A mechanical line setting device (line shooter) was used to deploy the mainline during the observed portion of the set.

Water Spray: During the observed portion of the set, water was sprayed on the sea surface on, near, or behind the area where the fishing gear was entering the water.

Deflate Swimbladder: During the observed portion of the setting of the gear, the swimbladders of fish used for bait were punctured or deflated. **Note:** Squid do not have swimbladders, therefore, if squid are used as bait, this deterrent cannot be used.

Blue-dyed Bait: During the observed portion of the setting of the longline gear, the bait was dyed blue. The blue color must be at least the same intensity as the NMFS blue color standard for bait. If the blue does not match the NMFS color standard, leave this box blank.

Weighted Branch Line: Weighted branch lines are used during the observed portion of the setting of the longline gear.

Strategic Offal Discard: Did vessel personnel discard offal (fish parts, excluding bait, not intended for human consumption) in a manner that attracts seabirds away from the longline gear during the observed portion of the set. If so, mark this box. **Note:** Use of this deterrent is not possible while deploying the gear for the first set of a trip.

*****If spent bait is retained during the haul and strategically discarded during the following set, check the *Other* deterrents box. Make sure to describe the situation in the comments section.

Bait Thawed: During the observed portion of the setting of the longline gear, the bait was completely thawed.

Set Underwater: During the observed portion of the set, was the gear deployed with an underwater setting chute?

Bait Set Outside Wake: During the observed portion of the set, the baits were thrown outside the vessel's wake.

Gear Set from Side: The longline gear was deployed from the side of the vessel. Some vessels may have the line shooter on one side or corner of the stern. That is not considered side setting.

Other: During the observed portion of the set, the vessel crew did something specifically to reduce seabird bycatch that is not included elsewhere in this list.

During Set Comments: Describe any other bird deterrent(s) used during the set. Describe any deterrent(s) used, but not properly deployed.

Don't forget to list the estimated number of seabirds observed during setting operations on the Protected Species Event Log.

During Haul

Deterrents Used: Place a checkmark or X in the appropriate box for each deterrent used during the hauling of the longline gear.

Night Hauling: The **Begin Pull** time is **at least one hour after the setting of the sun**. If the end of the pull was not completed at least one hour before sunrise note this in the comments.

Towed Buoy: A buoy or other floating object towed behind the vessel where baited hooks are deployed during the hauling of the longline gear.

Tori Line: A line approximately **150m** with intermittent swivels and streamers deployed so that it covers the area where baited hooks are retrieved during the hauling of the longline gear. Note in the comments if the line did not completely cover the gear.

Water Spray: During the observed portion of the haul, water was sprayed on the sea surface on or near the area where the fishing gear was exiting the water.

Blue-dyed Bait: During the hauling of the longline gear, the bait was dyed blue. Properly dyed bait will be faded, but a light blue color will still be evident. If more than a few baits appear undyed or several undyed baits are on consecutive hooks (i.e. one or more baskets), do not check this box. Document the details in the Comment section.

Weighted Branchline: During the haulback, most of the branchlines observed had weights attached. If more than a few branchlines did not have weights on them or several consecutive unweighted branchlines were observed, leave this blank and describe the situation in the Comment section on the form.

Strategic Offal Discard: Did the vessel personnel discard offal (fish parts not intended for human consumption) off the stern or opposite side of the vessel from where the longline gear is hauled aboard during the haul?

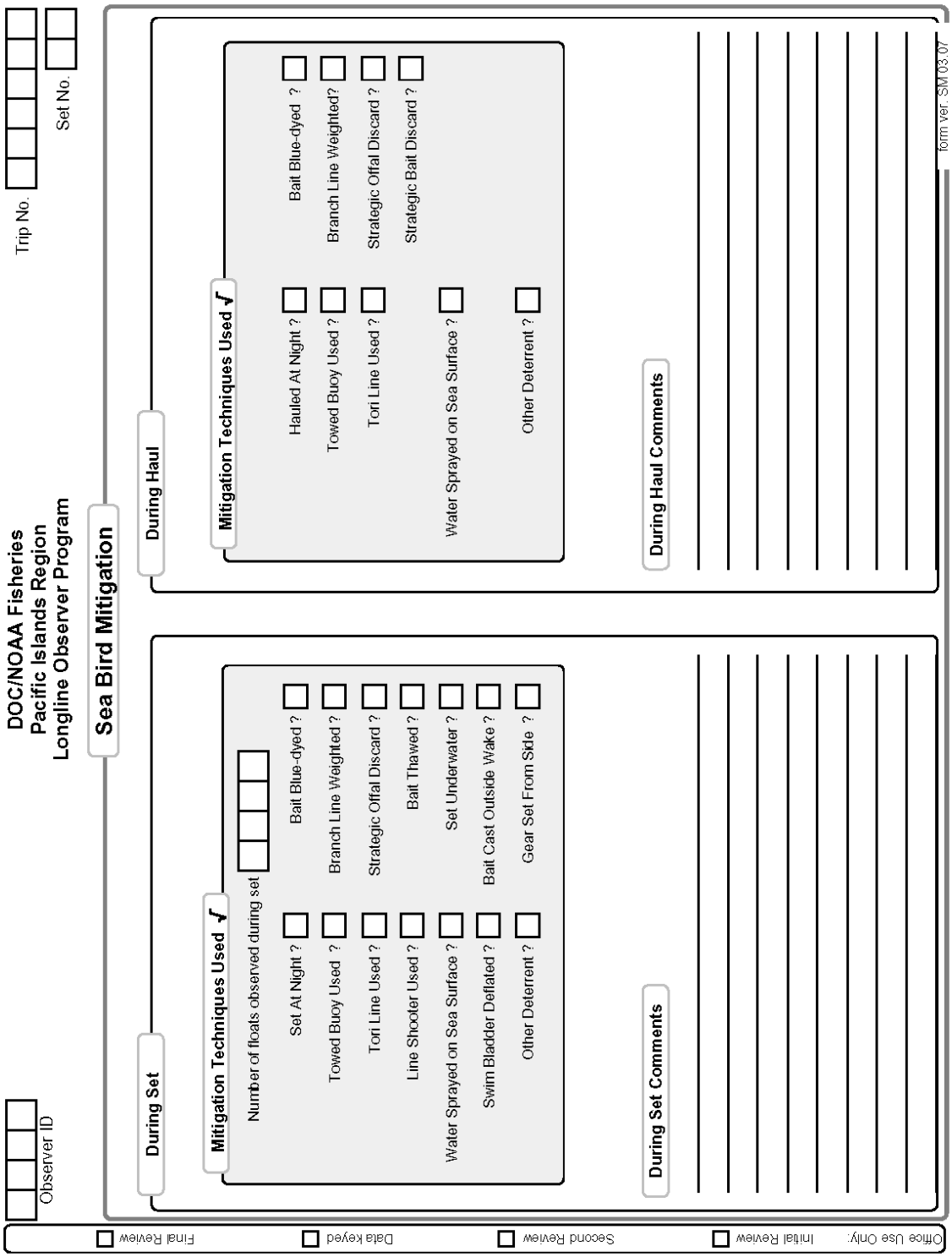
Strategic Bait Discard: Did the vessel personnel discard spent bait off the stern or opposite side of the vessel from where the longline gear is hauled aboard? If so, mark this box and describe the bait discard in the Comment section. If the spent bait is retained on board, leave this blank. If the spent bait is thrown over board on the same side as the gear is hauled aboard, leave blank.

Other: During the observed portion of the set, the vessel crew did something specifically to reduce seabird bycatch that is not included elsewhere in this list.

During Haul Comments: Describe any other bird deterrent(s) used during the set. Describe any deterrent(s) used, but not properly deployed or performed.

Don't forget to list the estimated number of seabirds observed during hauling operations on the Protected Species Event Log.

Seabird Mitigation Techniques Form



Longline Catch Log

Introduction

The ***L**ongline **C**atch **L**og* form is a record of the total number of fish and protected species (sea turtles, seabirds, marine mammals) **captured** during a set and their condition, disposition and measurements. Captured may include non-hooked fish such as remoras. The data are used to determine catch rates for target and non-target species in the fishery.

General Instructions

Record each fish in the order it is caught. Use the common English names from the Species Code list for the species of fish caught. Each fish should be listed individually. The higher priority elements within a line are to the left. Species composition and location (species name & float/hook no.) data are more important than condition data, which are more important than measurements. The check boxes at the end of each line are an exception.

When crewmembers are preparing to cut or unsnap a leader before the entire dropper line is brought to the surface, ask to see what species, if any, is on the line before it is cut or unsnapped. This request needs to be made each time a leader is going to be cut whenever the catch is not visible. If your request is denied, document each incident in the Interference Section of your Documentation Notebook.

****Do not record unknown objects (animals) on this form**. If there is an unknown object on the line (*i.e.* something that came off the hook/line before you could determine what it was) describe the situation on the Comments form. When recording information on *unknowns*, make sure to record the float & hook number. Record squid or other invertebrates that come up hooked or entangled on the Comments Log, not the Catch Log.

****If a fish (includes sharks) is landed, but you are unable to take any measurements, record the approximate length.** Do not measure fish missing their tails or those that have broken or damaged spinal columns.

Fish that come out of the water and fall off or are flipped off the hook by the fisherman are considered unlanded and should be given an approximate length. Observers should ask that, if possible, all dead fish be brought on board to measure.

Data Elements

Observer ID: In the upper left corner of the form, fill in the spaces with the Observer ID number assigned to you during training.

Trip Number: The unique six-digit number assigned by the Operations Coordinator. In the first two blocks, record **LL** for longline. After the second block, enter the four digit sequential number.

Set No.: Sets are numbered consecutively for each observed trip beginning with 01.

Catch Page No.: Number the first page of each set 01.

Haul Date: Record the **day of the haul**. Note: The date of the set may be the day previous to hauling back the gear, and not the day the catch is tallied. Use the standard date format.

Species English Name: Record the English common name of the species caught. At the lower left, is a list of commonly encountered fish with their species codes. If you run out of lines, continue recording the data on another Longline Catch Log.

Species Code: Enter the three-digit species code from the Species Code list for all fish. Note: There are separate codes for *unidentified types of animals* and *other identified* animals. Other identified means you were able to identify the animal, but the species doesn't have a species code assigned to it.

Float Number: For each fish record the sequential float number, along the mainline, associated with the hook number. (Float number one is the first float brought aboard in the retrieval process). Should the line part, continue to record float numbers sequentially. If the line parts at float 50 and the vessel motors to the end radio buoy to haul the gear; that radio buoy is counted as float 51 and the other floats are counted sequentially for the rest of the haul. A brief description of the where the line was retrieved following a parting and the number of floats (or amount of gear) lost should be included in the Comments Log. The end position recorded would then be the position of the last float of the set to come aboard. ***REMORAS:** Many large billfish & sharks have remoras attached on them. Record each remora on a separate line, but DO NOT record a float or hook number.

Hook Number: For each fish, record the sequential number of the hook after a float line. After each float comes aboard, start counting again from 1. ***REMORAS:** Many large billfish & sharks have remoras attached on them. Record each remora on a separate line, but DO NOT record a float or hook number.

Caught Condition: Indicate the condition of the animal at capture with these codes.

Fish & Sharks: A = Alive (active). **D** = Dead (or inactive). <u>If you are unable to determine whether or not a fish is alive, enter D.</u> Caught Condition codes I & U are reserved for protected species. They will not be accepted for fish or sharks.

Protected Species: A = Alive, **D** = Dead, **I** = Injured, **U** = Unknown.

Kept/Returned: Indicate if a fish is kept or returned, and its condition at the time of return by entering the appropriate letter code from one of the following categories. Fish that are returned to the environment, non-marketable species (incl. non-marketable species retained by the observer) and fish that come off the hooks should be marked with one of the return codes.

A fish or shark retained by the observer as a specimen (identification purposes or a research request) should be marked as returned dead.

*Do not enter a kept/returned code for protected species. That information is collected and recorded on the individual protected species data forms (Sea Turtle, Seabird, Marine Mammal)

K = Kept: Fish kept by the fishermen for sale or personal consumption. Note: Sharks are considered kept if any body parts (i.e. jaws, gall bladder, skin) other than the fins are retained. These parts are sometimes taken in addition to the fins.

A = Alive: Alive indicates that the animal swam away when released from the gear. Fish returned alive must be recorded as live in the caught condition column.

D = Dead: Dead indicates the animal did not swim away after being returned. There may be no visible muscular activity and the animal may be stiff or limp. Inactive fish should be marked as returned dead. A fish or shark retained by the observer as a specimen (identification purposes or a research request) should be marked as returned dead.

F = Finned: This code is for sharks only. It means that the fins, and only the fins, were retained and that the rest of the shark's body was discarded. Sharks are marked as kept if any body parts (i.e. jaws, gall bladder, skin, body) other than the fins are retained. These parts may be taken in addition to the fins.

U = Unknown: The animal was returned to the sea, but the observer was unable to determine the condition of the animal, or the animal was returned to the sea in a condition other than above. This includes unobserved discards. Describe any unknown returns in the notes/comments section.

Billfish - Eye to fork length: Estimated length in feet, from the posterior margin of the eye orbit to the fork in the tail.

Sharks & Fish - Fork length: Estimated length in feet, from the tip of upper snout to the fork in the tail.

Damage: Record the appropriate code for any damage observed. Refer to the damage code list on the form. Leave blank if the fish was not damaged. If you could not tell if the fish was damaged, e.g., the fish broke off before you could observe any damage, record "N.O." for *Not Observed*. Do not consider damage caused by efforts to land the fish. Describe any damage not covered by one of the damage codes. Refer to Catch Log page and line number, as well as the fish's common name on the Comments Log.

Sex: Indicate the sex of the specimen with an M or F. If the gender of the animal is unknown or undetermined, leave this blank. Refer to the following species group instructions for information on determining the sex of an individual fish.

Measurement Code: Enter the two letter code indicating which measurement(s) was taken. Different species groups have the following different measurements taken:

- **Billfish:** eye to fork, cleithrum to keel, half girth
- **Shark:** total length, fork length, d1-d2, clasper length(for males)
- **Tuna:** fork length
- **Opah & Pomfrets:** fork length

Measurement: Enter the length to the nearest whole centimeter. Instructions and diagrams at the end of this section for clarification.

Tagged: Check or X this box to indicate that a tag was recaptured or applied on this animal. If no tags were recaptured or applied, then leave this blank.

Specimen: Check or X this box to indicate that a biological specimen was collected from this animal. This could include a whole animal (fish, turtle or bird). If a specimen was not collected from the animal, leave this blank.

Photo: Check or X the box if you took a photo of the animal.

Comments: Check or X this box to indicate that notes exist describing damaged animals, animals with unknown disposition or other notes on the catch.

Fish Measurement and Sexing Instructions

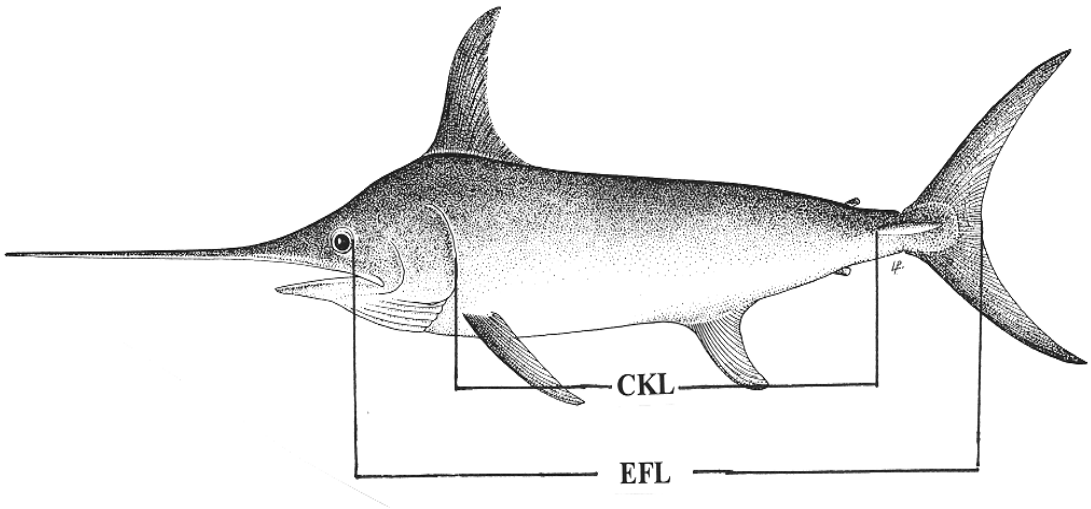
Record the length to the nearest centimeter. If possible, take measurements along the **left side** of the body. Accurate length measurements cannot be obtained from fish whose tails have been cut off, damaged or have a severed/damaged spinal column.

If you were unable to determine the sex of a fish or did not attempt to determine the sex of a particular fish, leave the sex column blank.

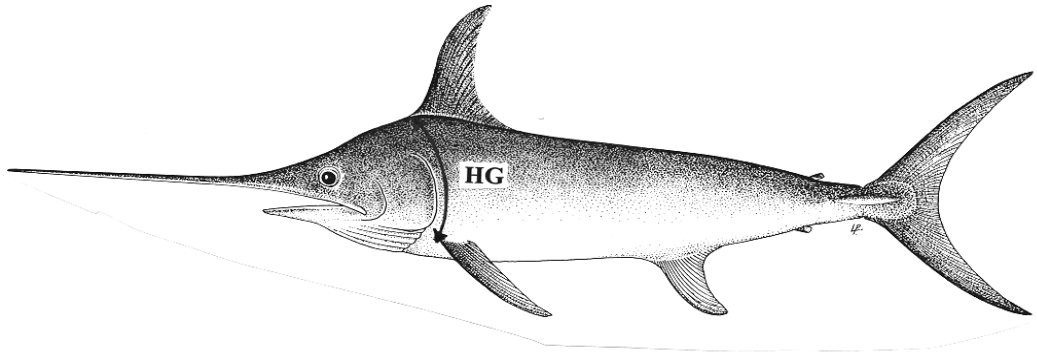
BILLFISH: (Marlins, Swordfish, Spearfish)

Eye to fork (EF): Measure from the posterior margin of **left eye** orbit to the inside of the fork in the tail. This measurement is taken with the 2m calipers.

Cleithrum to keel (CK): Measure from the posterior margin of cleithrum, i.e. hook caliper over the edge of the cleithrum, to the anterior insertion of the keel. This measurement is made with the 2m calipers.



Half-Girth (HG): Measure from the anterior insertion of the dorsal fin to the anterior insertion of the left pectoral fin. This measurement is taken with a flexible tape measure. Take the measurement **before** the fish is dressed.

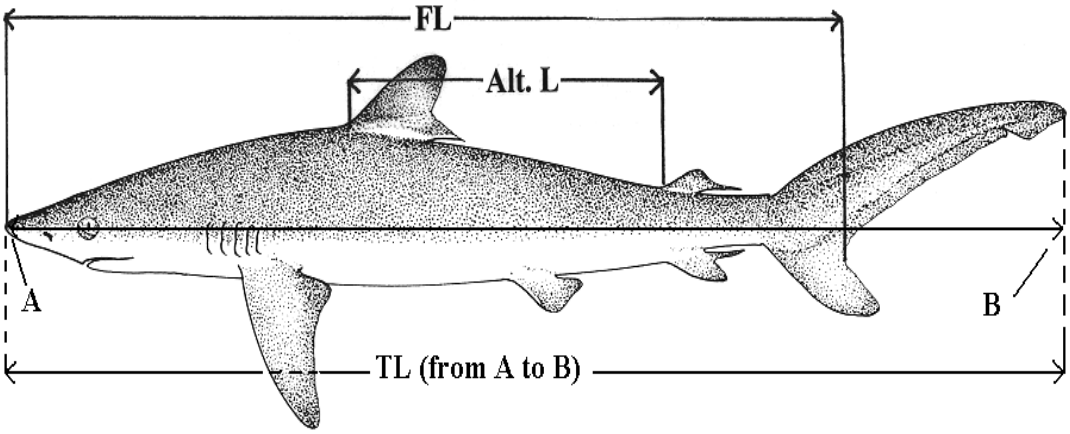


SHARKS

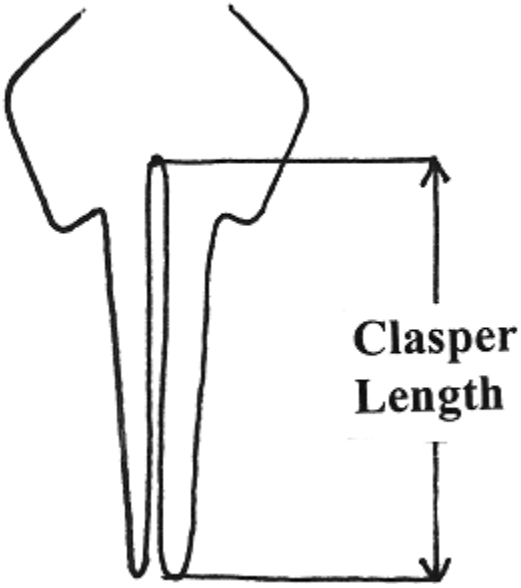
Total length (TL): Measure from the tip of the snout to an imaginary line from the tip of the tail to the midline of the body.

Fork length (FL): Measure from the tip of the snout to the center of the fork in the tail.

Alternate length (DD): Measure from origin of the first dorsal fin to the origin of the second dorsal fin.

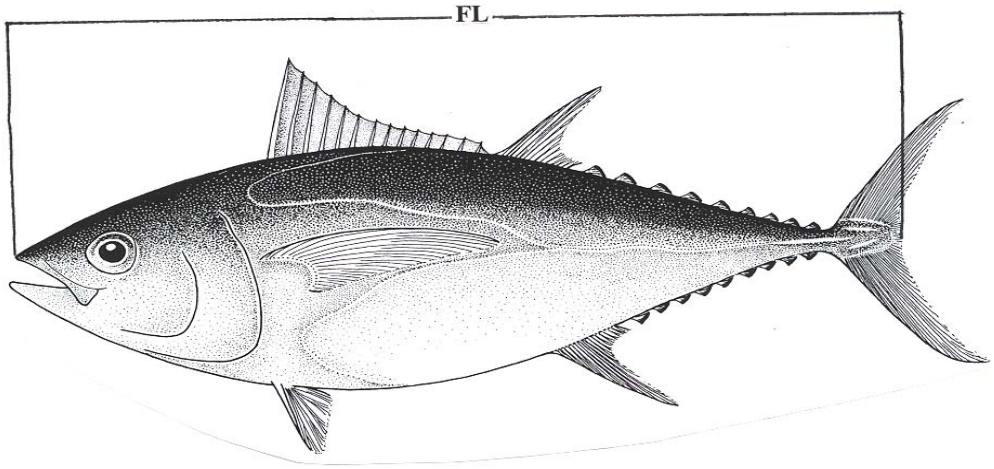


Clasper Length (CL): For male sharks, measure from the tip of the clasper to the center of the angle between the claspers.



TUNAS, OPAH and POMFRETS

Fork length (FL): Measure from the tip of the snout to the inside of the fork in the tail. If an Opah's mouth is open, close it to take the measurement.

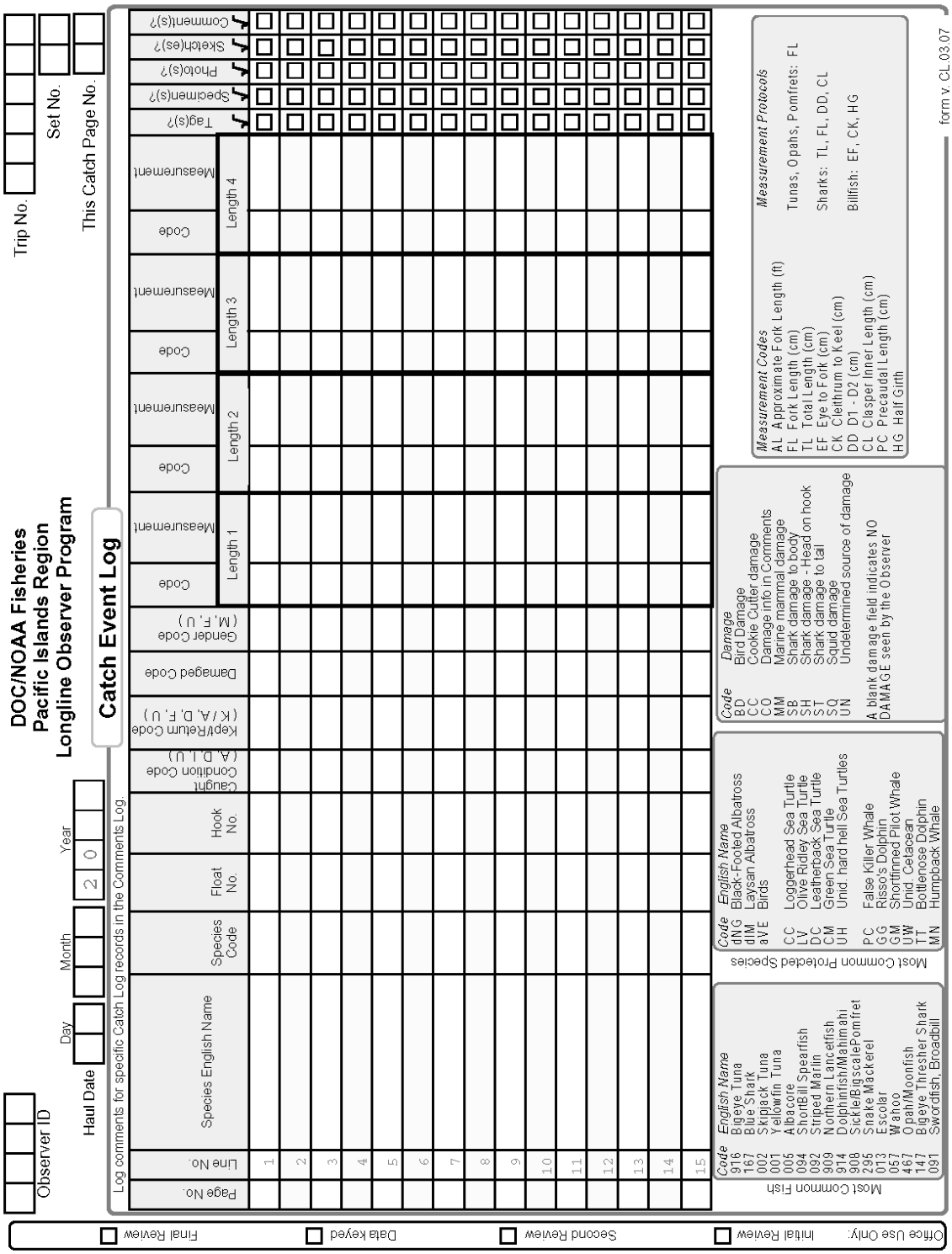


TUNA SEXING:

Female: The ovaries are fusiform (spindle shaped) paired structures. They are suspended from the ventral surface of the gas bladder, which can be confused with the dorsal wall of the coelom (gut cavity), and are united at their posterior extremities, terminating just behind the anus. The ovaries are yellowish in color and circular in cross-section.

Male: The testes are compressed (somewhat flattened) lanceolate paired structures. The testes are white or light cream in color and flattened in cross-section.

Longline Catch Log Form



Sea Turtle Biological Data

Introduction

The ***S**ea **T**urtle **B**iological **D**ata* form is used for recording biological data collected from sea turtles. These data will be used to determine the number, species, size and condition of sea turtles involved in the longline fishery in the central Pacific. Other data are recorded on the movements and preferred habitats of the various populations of sea turtles. These data are critical to the development of conservation and recovery strategies for these marine reptiles.

Remember:

Specimen collection and life history work are prioritized so if activity must be curtailed, the most important data and specimens have the highest probability of being collected.

The priorities of data & sample collection are as follows:

➢ Record sea turtle identifying characteristics, morphometric measurements, and tag data. Retain dead sea turtles after processing.

➢ Record seabird identifying characteristics and tag data. Retain dead seabirds after processing; leave any leg bands in place.

➢ Collect & record fish measurements.

General Instructions

Complete a Sea Turtle Biological Data form for every sea turtle observed caught (including entangled individuals). If a sea turtle is observed caught, but it is not landed, complete as much of the form as possible. For **unlanded** (are not brought on board) turtles you should complete at a minimum the following data elements:

1. Header information on the form.
2. Capture information block
3. Release information block.

If you are not sure of the number of scutes on the carapace, or you cannot take accurate measurements, leave the data field blank, or record it as unknown. **Take photographs of all captured turtles. Photograph sea turtles that are not brought aboard due to their large size when possible.**

With a little experience, sea turtles, when seen up close are generally easy to identify. Refer to the key at the end of this section for assistance.

Each sample is to be individually tagged and labeled. The label is to have the following information: specimen number, species of animal, and sample type, e.g., skin biopsy. The specimen number, is composed of the Trip, Set, Catch Log page no. and line number (see examples on p.14). If many samples are collected from the same animal and placed into a common plastic bag, ensure that each part is properly tagged and labeled. Label the plastic bag with a large tag clearly stating its contents.

Record tag data if tags are present when captured on a ***T**ag **D**ata* form. Photograph all sea turtles brought aboard; take a picture of the **dorsal**, **ventral**, and **frontal** views, as well as a photo showing the hook location in the turtle. (If the hook will be removed, take the photo before removing the hook.). If a satellite tag (PSAT) is attached to the turtle, take a picture of the carapace showing the satellite tag after attachment. Refer to the Data Collection Instructions section, page 11, for instructions and tips on taking photographs.

Data Elements

Observer ID: In the upper right corner of the form, fill in the spaces with the Observer ID number assigned to you during training.

Trip Number: The unique six-digit number assigned by the Operations Coordinator. In the first two blocks, record **LL** for longline. After the second block, enter the four digit sequential number.

Set Number: Record the set number from the Catch Event Log.

Species Code: Record the two-letter code from the Species Code list of the turtle captured.

Associated Log Forms: Place a checkmark or X in the box to indicate which additional log forms contain data associated with this turtle. If you mark a log form box, make sure to complete the information on the indicated log.

Catch Form Page No.: Record the page number from the appropriate Catch Event Log form.

Catch From Line No.: Record the line number from the Catch Event Log that contains information on the capture of this particular sea turtle.

Capture Information Block

Date of Capture: The date the turtle was caught. Use the standard date format (e.g 24 JUL 2003).

Time of Capture: Record the time the turtle was landed. Use the 24-hour format.

Position of Capture:

Latitude: Record the degrees and minutes of latitude of the vessel at the time the animal was landed. Record **N/S** in the last blank.

Longitude: Record the degrees and minutes of longitude of the vessel at the time the animal was landed. Record **E/W** in the last blank.

Landed: Place a checkmark or X in the box to indicate that the turtle was landed. Landed means the turtle was brought on board the vessel. Leave blank if the turtle was not landed. Describe the landing of the animal in the Comments Log.

Tags Present: Record a Y, N or U to indicate whether tags were present on the sea turtle at the time of capture.

Release Information Block

Date of Release: The date the turtle was released. Use the standard date format (e.g. 24 JUL 2003).

Time of Release: Record the time the turtle was released. Use the 24-hour format.

Position of Release:

Latitude: Record the degrees and minutes of latitude of the vessel at the time the animal was released. Record **N** or **S** in the last blank to indicate the hemisphere.

Longitude: Record the degrees and minutes of longitude of the vessel at the time the animal was released. Record **E** or **W** in the last blank to indicate which hemisphere.

Disposition Code: Record the code corresponding to the fate of the turtle. In the comments section on the back, record specific notes about any damage to the turtle. Describe the behavior of the turtle when it was released. **Note:** If the initial condition of the turtle changes, then the final condition should be recorded. Record complete notes of the change.

Disposition Code List

Previously Dead [01]: The turtle was already dead when it was captured/taken. This does not include turtles that appear to have died as a result of fishing operations.

Note: A **previously dead** turtle will usually have rotten tissue around the eyes and vents, and it may be bloated and foul smelling. It also may have sloughing scutes and scales.

Released Unharmed [02]: You observed the turtle returned to the sea alive and uninjured. This would apply to entangled sea turtles that escape from the gear before landing.

Released Injured [03]: The turtle was injured as a result of fishing operations, or by vessel personnel. "Injured" applies to animals removed from the gear with obvious physical injury or with gear attached. Turtles that are hooked are considered injured. Turtles that are entangled and landed should be considered injured too.

Died [04]: The turtle died due to injuries incurred during fishing operations, or was returned to the sea while comatose.

Escaped [05]: You observed the turtle leaving the gear or deck unaided after capture or entanglement, with no apparent injuries.

Treated as Catch [06]: The turtle was not previously dead and was sacrificed for market, table, or other use.

Other [07]: The final fate of the turtle is different from the above codes. Describe in Comments.

Unknown [08]: The final fate of the turtle was not observed.

Tags Removed & Tags Applied: Record a checkmark or X in the box to indicate if tags were removed from or applied to the turtle. Tags should only be removed if they are unreadable or in danger of falling off. Salvage any tags you remove for return to port. If you apply any tags (flipper or PSAT), make sure to fill out a Tag Log for each tag applied to the turtle.

Hooking / Entanglement Block

Hook/Entangled: Answer each question Y, N, or U. A turtle can be both hooked and entangled.

Hook/Entanglement Location: Select the code that indicates which part of the turtle the line was hooked & wrapped on. If more than one part is hooked or entangled, use the code indicating the part that had the most or most severe connection. Photograph the hook/entangled area, if possible and describe on Comments form.

Gear Removal Code: Choose the code that best indicates how the animal was removed from the longline gear.

Remaining Gear: Select the letter code indicating what type of fishing gear, if any, was not removed from the turtle. On the lines below, describe what type and amount (length) of gear left on the turtle. If the turtle is dead, photograph the remaining gear before wrapping the turtle up for storage.

Morphology Block

Answer these four questions with a **Y, No** or **U.**

Skin Covered Carapace: Is the carapace covered by thick rubbery skin?

Overlapping Scutes: Are there overlapping scutes on the dorsal surface?

Inframarginal Scutes w/ Pores: Do the inframarginal scutes have pores?

1 Pair Prefrontal Scales: Does the turtle have only one pair of prefrontal scales?

Carapace Scute Counts Block

No. of Left Costal Scutes: Count the number of costal scutes on the left side of the carapace and record the number. Refer to the diagrams on the back of the form for clarification.

No. of Right Costal Scutes: Count the number of costal scutes on the right side of the carapace and record the number. Refer to the diagrams on the back of the form for clarification.

No. Vertebral Scutes: Count the number of scutes on the midline of the carapace and record the number. Refer to the diagrams on the back of the form for clarification.

No. Inframarginal Scutes: Count the number of scutes on either side of the plastron. If the number of inframarginal scutes on each side differs, enter the higher number in the box, and record the details on the Comment Log.

Dorsal Carapace Coloration: Select the code that describes the general color of the carapace.

Measurements Block

Take measurements in centimeters, to the nearest **0.5-cm**, using a tape measure for curved measurements and a meter stick calipers for the straight measurements. Consult the illustrations on the back of the form for guidance. Try to remove any epibiota that affects any of these measurements, record the details on the back of the form.

The meter stick calipers may need adjustment and calibration periodically. Calibrate by comparing with the fiber tape measure, and tighten the locking screws on the stationary caliper jaw.

Carapace Length (curved): Record the distance between the center of the nuchal (the scute in the middle of the front edge of the carapace) scute and the rear edge of the

carapace, following the curvature of the dorsal centerline. If there is a notch between the two posterior marginal scutes, measure the distance to the rear most point of the scutes. For turtles with a keel running down the center of the carapace (leatherbacks, juvenile olive ridleys and loggerheads), measure to one side of the median keel, not on top of it.

Carapace Width (curved): Record the maximum distance between the lateral edges of the carapace, measured over the curvature of the shell.

Plastron Length (straight): Record the maximum distance from the anterior margin of the intergular scute to the posterior margin of the postanal scute. Use the 2m calipers for this data element.

Tail Length: Measure and record the distance between the posterior most point of the plastron and the tip of the tail. Use a tape measure for this data element.

Carapace Length (straight): Measure and record the distance between the center of the nuchal scute and the rear edge of the carapace. If there is a notch between the two posterior marginal scutes, measure the distance to the rear most point of the scutes. Use the 2m calipers for this data element.

Carapace Width (straight): Measure and record the maximum distance between the lateral edges of the carapace. Use the 2m calipers for this data element.

Sketch the dorsal and ventral views to illustrate lesions or injuries.

Light Device

Complete these elements only if devices were used on this set, and the device type has been indicated on the Gear Configuration form.

Color Code: Record the code that best indicates the color of the light emitted by the device. Code 8. Mixed is not a valid choice for this element.

Proximity Code: Select the code that shows how far away the next light device is from the branchline the turtle was on.

Turtle Specimen Collection Requirements

Observers should request, that any captured sea turtle that appears dead be brought aboard, if feasible. *Full size, adult Leatherback sea turtles may weigh up to 2,000lbs. Landing such a large turtle would be dangerous to both the vessel and crew. It is not feasible to attempt to land a Leatherback so large. ***Make an effort to <u>RETAIN</u> dead sea turtles for return to Honolulu.**

When a sea turtle comes aboard dead and will be brought back to port:

☛ Leave any entangled line or hook in place. Leave the free end about 2ft long.

☛ Do not apply flipper tags and leave any tags present in place.

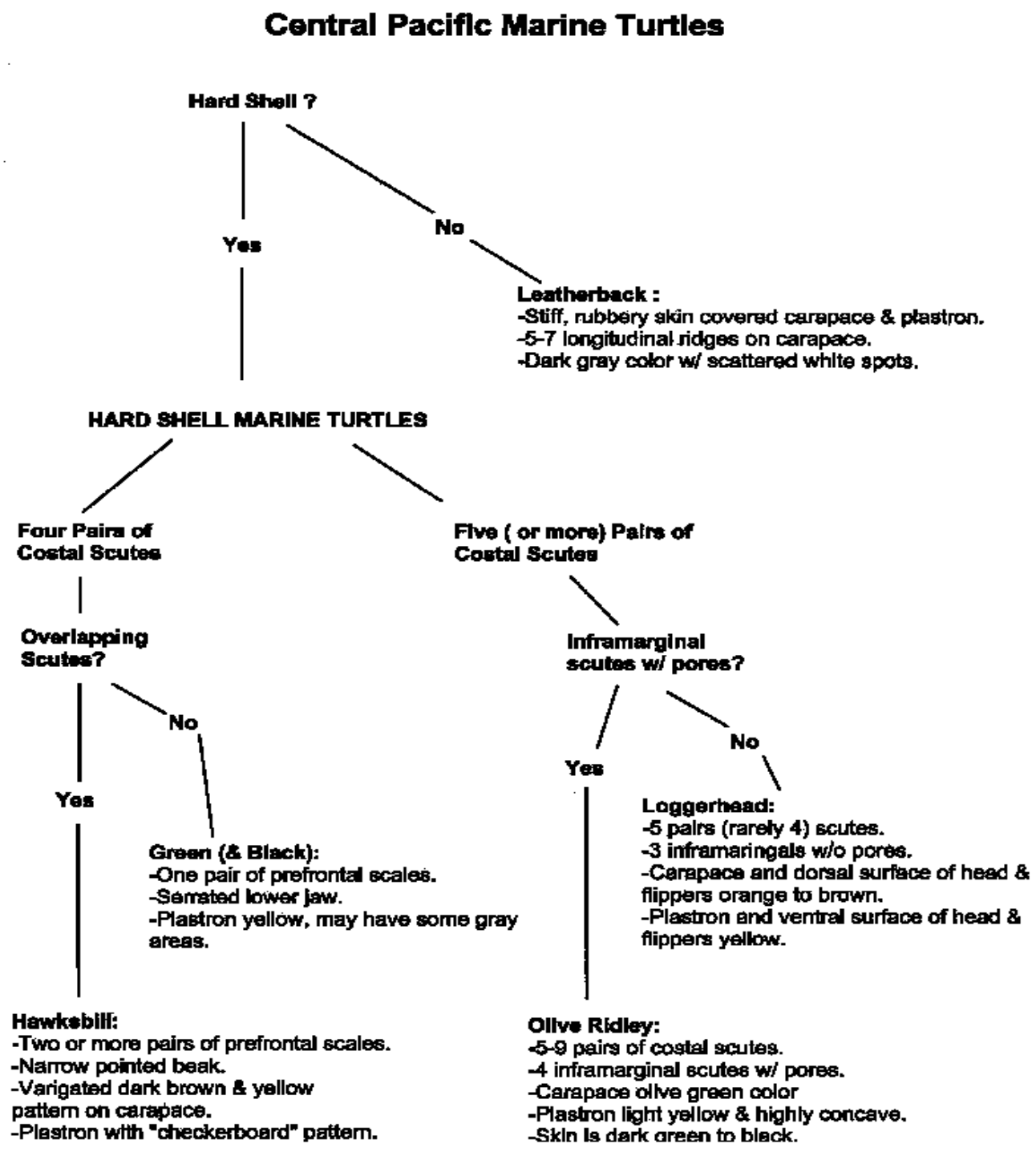
☛ Collect two skin biopsies.

☛ Take **three (3) photographs of identifying characteristics**: Dorsal, Ventral, and Frontal views.

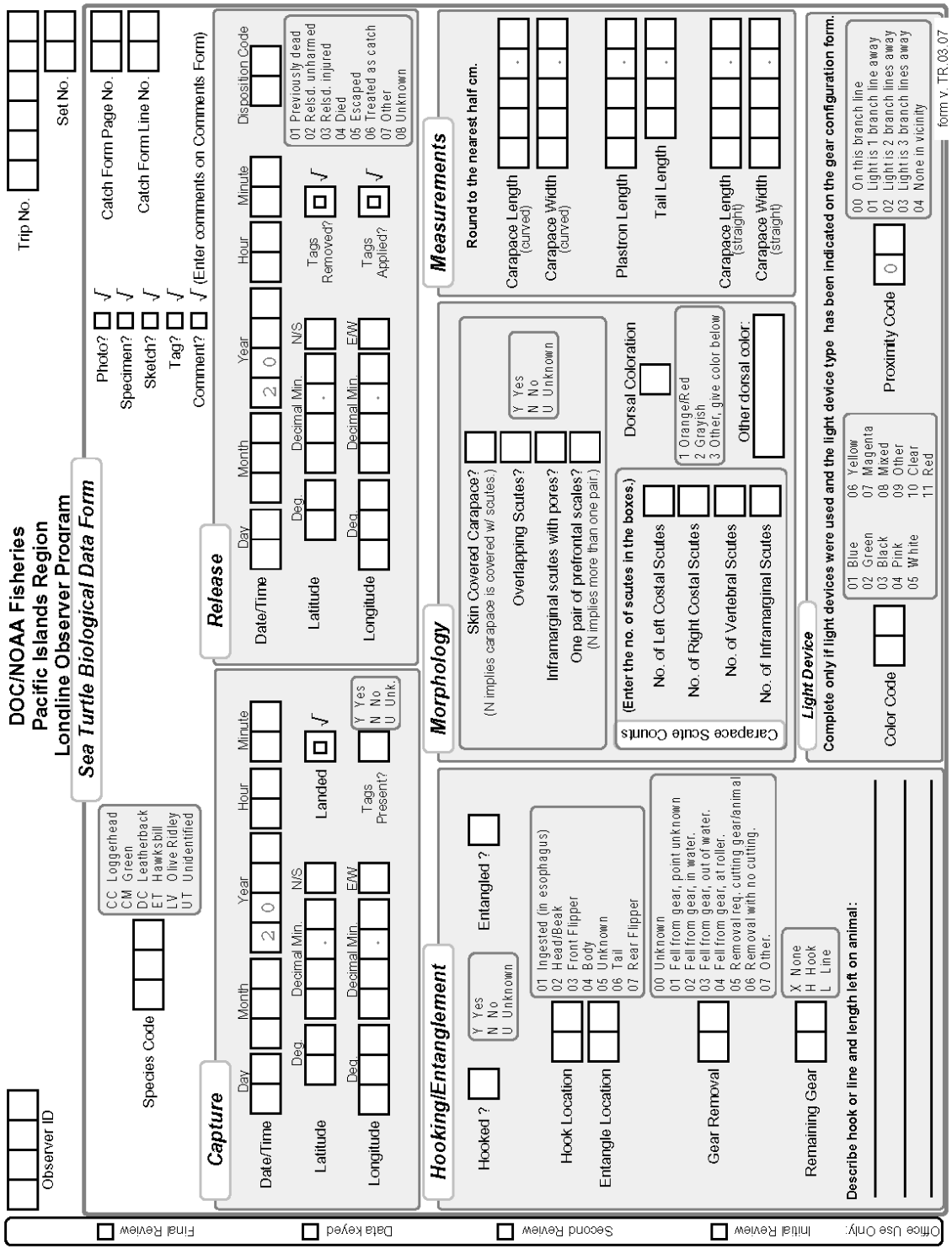
☛ Complete a Sea Turtle Biological Data Form.

☛ Record the turtle on the Specimen Log and update your Radio Report form.

☛ Double wrap and store frozen or buried in ice until the turtle is secured at the NMFS, Pacific Islands Fishery Science Center in Honolulu, HI.


Central Pacific Marine Turtles
Hard Shell ?
Yes
No
Leatherback :
-Stiff, rubbery skin covered carapace & plastron.
-5-7 longitudinal ridges on carapace.
-Dark gray color w/ scattered white spots.
HARD SHELL MARINE TURTLES
Four Pairs of Costal Scutes
Five (or more) Pairs of Costal Scutes
Overlapping Scutes?
Inframarginal scutes w/ pores?
No
Yes
Green (& Black):
-One pair of prefrontal scales.
-Serrated lower jaw.
-Plastron yellow, may have some gray areas.
Yes
No
Loggerhead:
-5 pairs (rarely 4) scutes.
-3 inframaringals w/o pores.
-Carapace and dorsal surface of head & flippers orange to brown.
-Plastron and ventral surface of head & flippers yellow.
Hawksbill:
-Two or more pairs of prefrontal scales.
-Narrow pointed beak.
-Varigated dark brown & yellow pattern on carapace.
-Plastron with "checkerboard" pattern.
Olive Ridley:
-5-9 pairs of costal scutes.
-4 inframarginal scutes w/ pores.
-Carapace olive green color
-Plastron light yellow & highly concave.
-Skin is dark green to black.

Sea Turtle Biological Data Form



Seabird Biological Data Form

Introduction

The ***S**eabird **B**iological **D**ata* form is used for recording data from seabirds incidentally caught during longline fishing operations. These data will be used to determine the number, species, and the condition of seabirds involved in the longline fishery in the central Pacific. These data are critical to the development of conservation and recovery strategies.

Remember

Specimen collection and life history work are prioritized so if activity must be curtailed, the most important data and specimens have the highest probability of being collected.

The priorities of data & sample collection are as follows:

- Record sea turtle identifying characteristics, morphometric measurements, and tag data. Retain dead sea turtles after processing.

- Record seabird identifying characteristics and tag data. Retain dead seabirds after processing; leave any leg bands in place.

- Collect & record fish measurements.

General Instructions

Complete a Seabird Biological Data form for every seabird observed caught (including entangled individuals). If a seabird is observed caught, but it is not landed, complete as much of the form as possible. For unlanded seabirds you should complete at a minimum the following data elements: 1. header information on the form. 2. capture information block 3. release information block.

Complete a Seabird Bycatch Data Form for every seabird brought aboard. If you are not sure of what to record in any element leave the data field blank, and describe the situation with notes. **Take photographs of all unidentified seabirds that are caught.**

Data Elements

Observer ID: In the upper left corner of the form, fill in the spaces with the Observer ID number assigned to you during training.

Trip Number: The unique six-digit number assigned by the Operations Coordinator. In the first two blocks, record **LL** for longline. After the second block, enter the four digit sequential number.

Set Number: Record the set number from the Catch Event Log.

Species Code: Record the three-letter code from the Species Code list, which corresponds to the species of the seabird in the code box.

Check boxes: Place a checkmark or X on the box for each type of additional documentation or information was collected form this specimen.

Catch Log Page No.: Record the page number from the appropriate Catch Event Log form.

Catch Log Line No.: Record the line number from the Catch Event Log that contains information on the capture of this particular seabird.

Capture Information
Date of Capture: The date the bird was landed. Use the standard date format.

Time of Capture: Record the time the bird was landed. Use the 24-hour format.

Position of Capture:

Latitude: Record the degrees and minutes of latitude of the vessel at the time the animal was landed. Record **N/S** in the last blank.

Longitude: Record the degrees and minutes of longitude of the vessel at the time the time the animal was landed. Record **E/W** in the last blank.

Landed: Place a checkmark or X in the box to indicate whether or not the bird was landed. Landed means the seabird was brought on board the vessel. Leaving this box blank means the bird was not brought on board the vessel. Describe the landing of the animal in the Comments section.

Release Information
Date of Release: The date the bird was released. Use the standard date format.

Time of Release: Record the time the bird was released. Use the 24-hour format.

Position of Release:

Latitude: Record the degrees and minutes of latitude of the vessel at the time the animal was released. Record **N** or **S** in the last blank to indicate the hemisphere.

Longitude: Record the degrees and minutes of longitude of the vessel at the time the time the animal was released. Record **E** or **W** in the last blank to indicate which hemisphere.

Disposition Code: Record the code corresponding to the fate of the bird. In the notes section, record specific notes about any damage to the bird. **Note:** If the initial condition of the bird changes, then the final condition should be recorded. Record complete notes of the change.

Previously Dead [1]: The bird was already dead when it was captured/taken. This does not includes seabirds that appear to have died as a result of the fishing operations.

Note: A **previously dead** seabird may have rotten tissue around the eyes and vents, and it may be bloated and foul smelling. It also may have sloughing skin and feathers.

Released Unharmed [2]: You observed the bird returned to the sea alive and uninjured. This would apply to entangled seabirds that escape from the gear before landing.

Released Injured [3]: The bird was injured as a result of fishing operations, or by vessel personnel. "Injured" is an animal removed from the gear with obvious physical injury or with gear attached. A seabird that is hooked is considered injured. A seabird that was entangled and landed should be considered injured.

Killed Accidentally [4]: The bird died due to injuries incurred during fishing operations, or was returned to the sea while comatose.

Escaped [5]: You observed the bird leaving the gear or deck unaided after capture or entanglement, with no apparent injuries.

Treated as Catch [6]: The bird was not previously dead and was sacrificed for market, table, or other use.

Other / Unknown [7]: The final fate of the bird involved in the set is unknown or whose condition after leaving the gear or deck was unobserved.

Hooking / Entanglement
Hooked/ Entangled: Answer **Y**, **N** or **U** for each element. Each box should be filled in independent of the other. A single bird will have two "yes" answers, if it was both hooked & entangled.

Hook/Entanglement Location: Select the code that indicates which part of the bird was hooked or entangled. Photograph the hook/entangled area, if possible and describe in the Comment section on the back of the form.

Gear Removal Code: Choose the code that best indicates how the animal was removed from the longline gear.

Remaining Gear: Select the letter code indicating what type of fishing gear, if any, was not removed from the bird. In the box below, describe what the type and amount (length) of gear left on the bird. If the bird is dead, photograph the remaining gear attached to the bird before wrapping it up for storage.

Morphology Block

Enter the appropriate code for each of these items; bill color, head color, and mantle color. If the tip of the bill is a different color than rest of the bill, write an X or checkmark in the box.

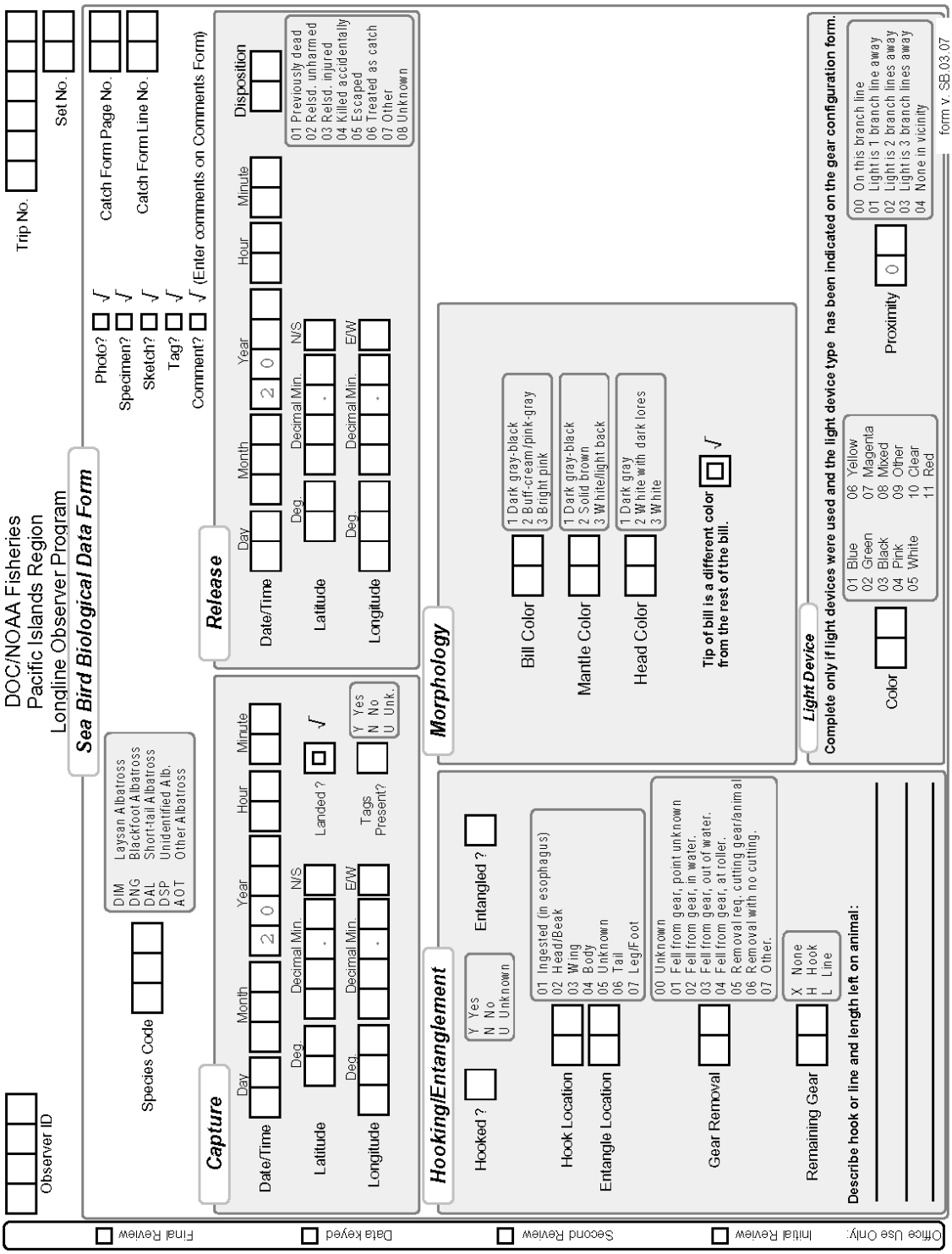
Light Devices Block

Complete these elements only if devices were used on this set, and the device type has been indicated on the gear configuration form.

Color Code: Record the code that best indicates the color of the light emitted by the device. Code 8. Mixed is not a valid choice for this element.

Proximity Code: Select the code that shows how far away the next light device is from the branchline the bird was on.

Seabird Biological Data Form



Marine Mammal Biological Data From

Introduction

The ***M**arine **M**ammal **B**iological **D**ata* form is used to record the biological data from any pinnipeds (seals) and cetaceans (whales & dolphins) incidentally caught during fishing operations. The information obtained is used to develop baseline data on marine mammal species for which little information is available. These data can be used to estimate age at sexual maturity, birth rates, feeding habits, life span and sex ratios. This data together with mortality and population abundance data can be used to ascertain whether changes in population abundance are due to fishing activities in the Pacific.

This life history form is designed for volume specimen processing in the field, allowing the observer to write a minimum of information by checking off blocks in the upper "field" section of the form. The shaded blocks and lower portion of the form are for lab personnel use.

General Instructions

Complete a Marine Mammal Biological Data form for every marine mammal observed caught (including entangled individuals). If a marine mammal is observed caught, but it is not landed, complete as much of the form as possible. Try to get an estimated length of the animal.

If you cannot collect a particular measurement, explain in the **ADDITIONAL COMMENTS** section.

Complete only the "**In Field**" portion of the form. Do not mark the shaded boxes.

Data Elements

Specimen Number: Enter the number for each specimen sexed and measured, collected whole or dissected.

Cruise Number: Record the unique six-digit number assigned by the Operations Coordinator. In the first two blocks, record **LL** for longline. After the second block, enter the four digit sequential number.

Date: Date the marine mammal was processed. Record the last two digits of the year, the two digits representing the month, and the two digits representing the day.

Set Number: Sets are numbered consecutively for each observed trip beginning with 01.

Latitude: Record the degrees (two digits), minutes (two digits) and tenths of latitude of the start haul position.

Longitude: Record the degrees (three digits), minutes (two digits) and tenths of longitude of the start haul position.

Species: Record the common name of the specimen.

Sex: Mark the box representing the sex of the specimen.

Length: For cetaceans, record to the nearest centimeter, the length from the tip of the upper jaw to the notch of the tail fluke. For pinnipeds, record to the nearest centimeter, the length from the tip of the snout to the end of the tail.

Note: If the animal cannot be straightened out due to rigor mortis, record the curvilinear length along the animal's backbone.

Curvilinear: If the length of the animal was determined by a curvilinear measurement mark the "**Y**" box, if not mark "**N**".

Girth: For cetaceans, record to the nearest centimeter the girth measured just anterior to the leading edge of the dorsal fin. For N. right whale dolphins (*Lissodelphis borealis)* and pinnipeds, measure girth at the axilla, just posterior to the insertion of the flippers.

Rear Flipper Length: For PINNIPEDS, record the distance in centimeters from the anterior insertion of the right rear flipper to the tip of the first toe.

Lactating: Is there any indication of lactation? Mark the appropriate box. If the specimen is a male, leave this box blank.

Fetus M/F: Mark the appropriate box indicating the sex of any fetus 25-cm.

Fetus Length: Record in centimeters and tenths the length of any fetus 25-cm.

Note: If the animal cannot be straightened out due to rigor mortis, record the curvilinear length along the animal's backbone.

Curvilinear: If the length of the fetus was determined by a curvilinear measurement mark the "**Y**" box, if not mark "**N**".

Were Specimens Collected?

Mark the box or boxes for each specimen processed indicating which items you have collected. If the question is not relevant to the sex of the specimen, leave the boxes blank.

Photos: Did you take any photographs of this specimen? Record the camera and frame numbers in the ADDITIONAL COMMENTS section and again in the Photo Log.

Identification:

Diagnostic Characteristics: Try to list five of the diagnostic characteristics you used to identify this animal.

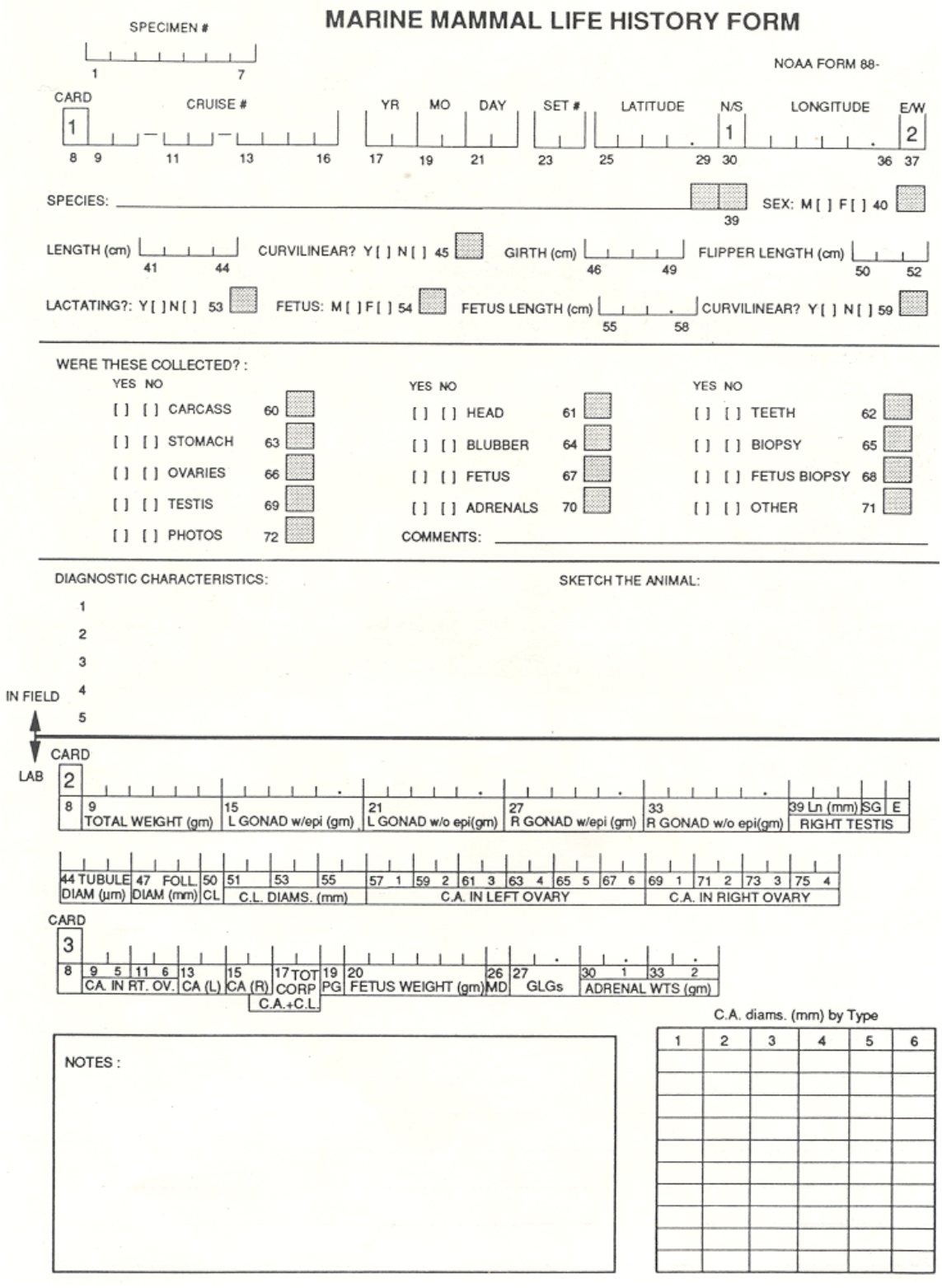
Sketch: Sketch the features you saw and used to identify this animal.

ADDITIONAL COMMENTS: Describe in as much detail as possible all tag information; tag type, number, address, color, and location on the animal. Also record any other facts that you think are important. Use the back of this form if you need more space.

Specimen Collection Requirements

Refer to the tissue sampling protocols in the appendices.

Marine Mammal Life History Form



Miscellaneous Forms

USFWS FORM 3-177 & CITES IMPORT FORMS

The **CITES Import Form** and **USFWS 3-177** are used by the U.S. Fish & Wildlife Service to track the importation of protected species into the US and its territories.

Two **(2) USFWS Form 3-177's** and one **(1) CITES** Import form should be completed for each trip when protected species specimens (parts or whole animals) are collected outside of 200 miles.

The **USFWS 3-177** is completed as follows. Refer to example at the end of this section.

Upper left hand block

1. Date: write the date of arrival at the port of entry.

2. I/E (import/export) license number: write **N/A**.

3. Indicate one: check box for import.

4. Port of Clearance: write **H A** in the blanks. (for Honolulu)

5. Purpose code: write **S** in the blank.

6. Customs Entry Number: write **N/A**.

Upper right hand block

7. Name of Carrier: write name of vessel.

8. Airway bill or bill of lading number: write **N/A**.

9. Transportation code: write **O** in the top blank. Write **N/A** in the blanks for *License* and *State*.

10. Bonded location for inspection: write **N/A**.

11. Number of cartons containing wildlife: write in the number of packages.

12. Package markings containing wildlife: write the sample number.

13. U.S. Importer of record: the address should already be typed in.

14a. Foreign supplier/receiver: the phrase **Taken from high seas** should already be typed in the box.

14b. Write **XX** in the blanks provided.

15. Customs broker, shipping agent....: write **N/A**.

16a. & 16b. Scientific name/common name: write the required (English) name in the boxes available.

17a. Leave blank.

17b. US Cites Permit Number: the number (**US022729/9**) should be already typed in.

18a. Description code: use the following **-BOD**..dead animal (whole). **-SPE**..specimens (scientific, biological incl. blood and/or tissue).

18b. Source: the code **W** (specimen taken from the wild) should already be typed in.

19a. Quantity/Unit: write **NO** (number) and the number of specimens.

19b. Monetary value: write **N/A**.

20. Country of Origin: write **High Seas**.

21. Sign and date in the blanks indicated.

The **CITES Import** form should be completed as follows. Refer to the example on page 120.

Item 11: indicate the total number of animals from which specimens were collected.

Item 12: write **High Seas**.

When these forms are complete, put them in your data folder and notify your debriefer.

USFWS 3-177 : EXAMPLE

O.M.B. No. 1018-0012
Expiration Date: 10/31/2003

1. Date of Import/Export: (mm/dd/yyyy) __ __ / __ __ / __ __ __ __
2. I/E License Number: N/A
3. Indicate One: [X] Import [ ] Export
4. Port of Clearance: H A
5. Purpose Code: S
6. Customs Entry Number: N/A

DECLARATION FOR IMPORTATION OR EXPORTATION OF FISH OR WILDLIFE

Please Type or Print Legibly

7. Name of Carrier:
8. Air Waybill or Bill of Lading Number:
Master:
House:
9. Transportation Code: N/A (License) O (State)
10. Bonded Location for Inspection: N/A
11. Number of Cartons Containing Wildlife:
12. Package Markings Containing Wildlife:

13. (indicate one) (complete name / address / phone number)
[X] U.S. Importer of Record
[ ] U.S. Exporter
DOC/NOAA/NMFS/SWR/PIAO
1601 Kapiolani Blvd., Suite 1110
Honolulu, HI 96814

14a. Foreign Supplier / Receiver: (complete name / address / phone number)
Taken From High Seas
14b. X X

15. Customs Broker, Shipping Agent or Freight Forwarder:
Phone Number / Fax Number:
Contact Name:

Species Code (Official Use)	16a. Scientific Name / 16b. Common Name	17a. Foreign CITES Permit Number / 17b. U.S. CITES Permit Number	18a. Description Code / 18b. Source	19a. Quantity / Unit / 19b. Total Monetary Value	20. Country of Origin of Animal
		US022729/9	W	N/A	High Seas
		US022729/9	W	N/A	High Seas
		US022729/9	W	N/A	High Seas
		US022729/9	W	N/A	High Seas
		US027729/9	W	N/A	High Seas

Knowingly making a false statement in a Declaration for Importation or Exportation of Fish or Wildlife may subject the declarant to the penalty provided by 18 U.S.C 1001 and 16 U.S.C. 3372 (d)

21. I certify under penalty of perjury that the information furnished is true and correct:
Signature Date
Type or Print Name

FOR OFFICIAL USE ONLY

Action/Comments:

Wildlife Inspected:
None / Partial / Full

SEE REVERSE OF THIS FORM FOR PRIVACY ACT NOTICE

CITES IMPORT PERMIT: EXAMPLE

FORM 3-201A (1/97)

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA

IMPORT PERMIT

Page 1 of 1

1. Original Permit/Certificate No.
01US022729/9

2. Valid until
05/28/2002

3. Permittee (name and address, country)
NATIONAL MARINE FISHERIES SERVICE SOUTHWEST REGION
501 WEST OCEAN BOULEVARD
SUITE 4200
LONG BEACH, CA 90802-4213

4. Consignee (name and address, country)
DOC/NOAA/NMFS/SWR/ PIAO
HAWAII LONGLINE OBSERVER PROGRAM

5. Special Conditions
- MUST COMPLY WITH ATTACHED GENERAL PERMIT CONDITIONS.
- U.S. ENDANGERED SPECIES (50 CFR 17.22).
- PERMIT MAY BE COPIED FOR MULTIPLE SHIPMENTS; PERMITTEE TO RETAIN ORIGINAL.
- A COPY OF THE ANNUAL REPORT AS REQUIRED UNDER NMFS/ESA PERMIT No. 1190 SEC.C 1. MUST BE SUBMITTED PRIOR TO RE-ISSUANCE OR UPON THE EXPIRATION OF THIS PERMIT WHICHEVER OCCURS EARLIEST.
- PERMITTEE MUST COMPLETE BLOCK 11 AND SHIPMENT #:_____, PRIOR TO EACH SHIPMENT.
- THIS RE-ISSUES AND AMENDS 00US022729/9 ISSUED 5/12/2000.

-May not be used for commercial purposes. -For live animals, only valid if the transport conditions comply with the CITES Guidelines for Transport of Live Animals or, in the case of air transport, with IATA Live Animals Regulations.

5a. Purpose of Transaction
S

5b. Security Stamp No.
US92 60 199

6. U.S. Management Authority

OFFICE OF MANAGEMENT AUTHORITY
U.S. FISH AND WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR
WASHINGTON, D.C. 20240
UNITED STATES OF AMERICA

05/29/2001
Issuing Date

United States Management Authority

AUTHORITY: Endangered Species Act of 1973 (16 USC 1531 et. seq.)

7/8. Common Name and Scientific name (genus and species) of Animal or Plant	9. Description of Part or Derivative, including identifying marks or numbers (age/sex if live)	10. Appendix No. and Source
A. Common Name: GREEN SEA TURTLE Scientific Name: CHELONIA MYDAS	9. INTRODUCTION FROM THE SEA: SAMPLES OR WHOLE CARCASS TOTAL NOT TO EXCEED 20.	10. 1 W 11. Quantity (including units) 12. Country of Origin
B. Common Name: LEATHERBACK SEA TURTLE Scientific Name: DERMOCHELYS CORIACEA	9. INTRODUCTION FROM THE SEA: SAMPLES OR WHOLE CARCASS TOTAL NOT TO EXCEED 50.	10. 1 W 11. Quantity (including units) 12. Country of Origin
C. Common Name: LOGGERHEAD SEA TURTLE Scientific Name: CARETTA CARETTA	9. INTRODUCTION FROM THE SEA: SAMPLES OR WHOLE CARCASS TOTAL NOT TO EXCEED 300.	10. 1 W 11. Quantity (including units) 12. Country of Origin
D. Common Name: HAWKSBILL SEA TURTLE Scientific Name: ERETMOCHELYS IMBRICATA	9. INTRODUCTION FROM THE SEA: SAMPLES OR WHOLE CARCASS TOTAL NOT TO EXCEED 20.	10. 1 W 11. Quantity (including units) 12. Country of Origin
E. Common Name: OLIVE RIDLEY SEA TURTLE Scientific Name: LEPIDOCHELYS OLIVACEA	9. INTRODUCTION FROM THE SEA: SAMPLES OR WHOLE CARCASS TOTAL NOT TO EXCEED 20.	10. 1 W 11. Quantity (including units) 12. Country of Origin

Specimen(s) will not be used for primarily commercial purposes. The recipient has suitable facilities to house and care for the specimen(s).

Specimen Log

The **S**pecimen **L**og is a record of all specimens & samples collected by an observer during a cruise. As many forms as needed should be filled out.

The header of the form contains the Observer ID number, Trip No. and Specimen Log page number.

Date: Enter the date the specimen was collected. This is usually, the same as the date the Set was hauled.

This Forms Page & Line No.: The page number that appears at the top of this form. The line number is pre-filled.

Set: Enter a two-digit number indicating the set that the specimen was collected from. If a specimen was collected while the vessel was not engaged in fishing operations leave blank and describe the situation with notes.

Catch Form, Page & Line No.: The form type is pre-filled with the code for Catch Log. Enter the Page & Line no. from the Catch Log that contains the data on the animal from which the specimen was collected from.

Specimen Code: Enter the single letter code that indicates the type of specimen was collected. Refer to the code chart on the left margin on the form.

Specimen Type: The English term for this specimen type

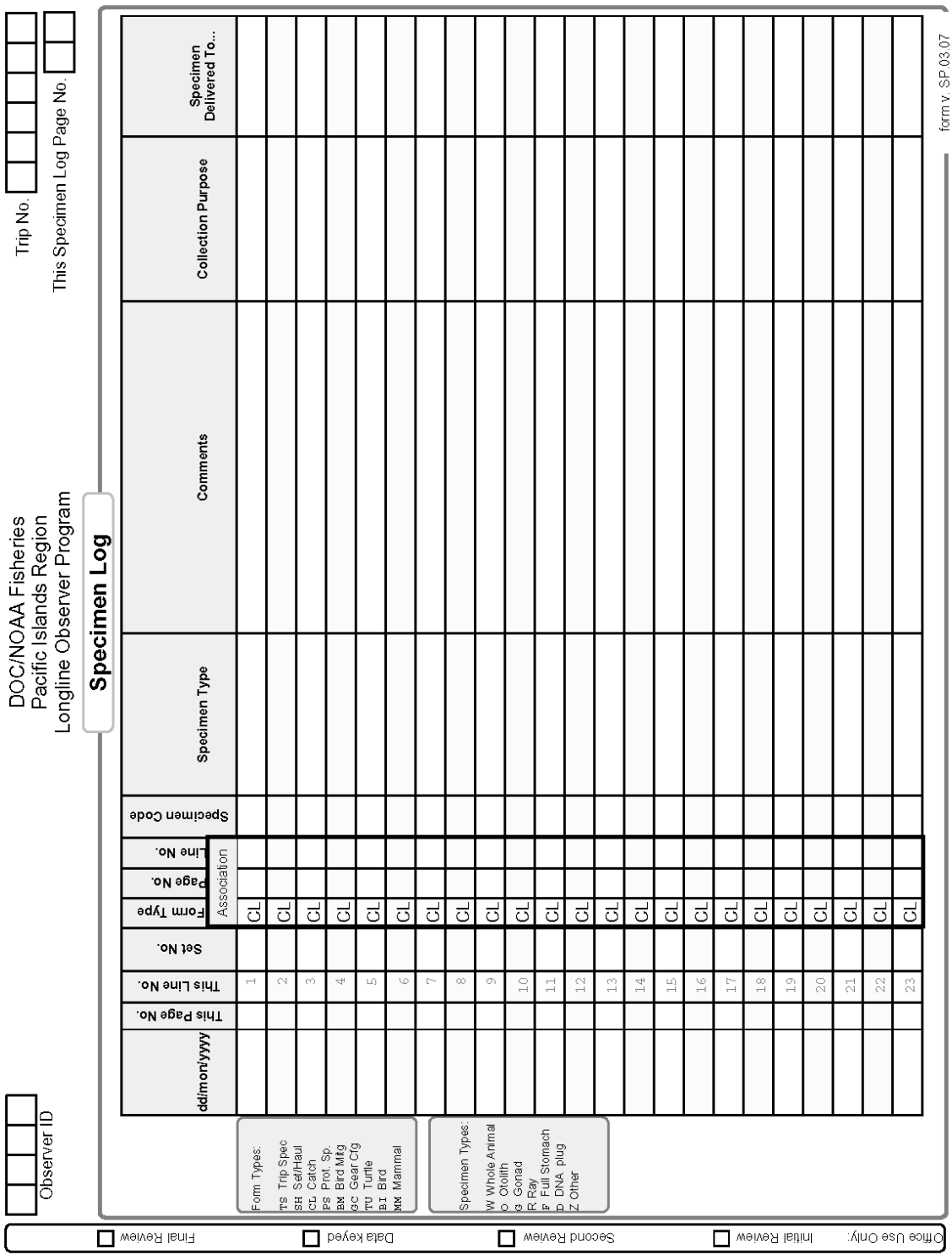
Content Description: General comments about this specimen.

Collection Purpose: Explain, if there is an unusual reason for collection this specimen.

Specimen Delivered To: This is completed after the cruise.

At the end of each cruise, check each specimen label and match it on the Specimen Log to ensure the specimen numbers and contents are correct.

Specimen Log Form



Tag Data Form

The ***T**ag **D**ata **F**orm* is a record of data on every tag recovered or deployed during a tip. The recovery of tagged animals is rare. The information from a recovery is very important to researchers and resource managers in several agencies.

Fill out the header information with the appropriate data. Fill out a separate form for each tag encountered on an animal.

Species Code: Enter the two letter or three-digit species code.

Tag Event Type: Select AP, RC or RM to indicate if a tag was Applied, Recovered or Removed. Describe the removal in the comment section of the form. **Note:** Only remove tags from animals if they are in danger of falling off or are unreadable.

➜If a sea turtle is captured and it already has flipper tags on its front flippers; leave them in place. Fill out a Tag Data Form for each tag recovered, and one for each of the flipper tags you place on the flippers.

➜If a banded, dead albatross is encountered and it is salvaged (pulled up and saved) from longline fishing operations; leave the bands on the bird's leg.

Tag Number: Fill in the boxes with the number-code on the tag. Make sure the sequence matches what is on the tag. Different tags may have different mixes of letters & numbers; E-770 is not the same tag as 770-E.

Tag Type Code: Select the code from the reference table that indicates the type of tag encountered.

Tag Location Code: Select the code for where the tag was attached to the animal's body.

Tag Material Code: Enter the code for the material the tag is constructed of. Inconel is a type of metal used for sea turtle flipper tags.

Tag Color Code: Select the code for the color of the tag.

Tag Data Form

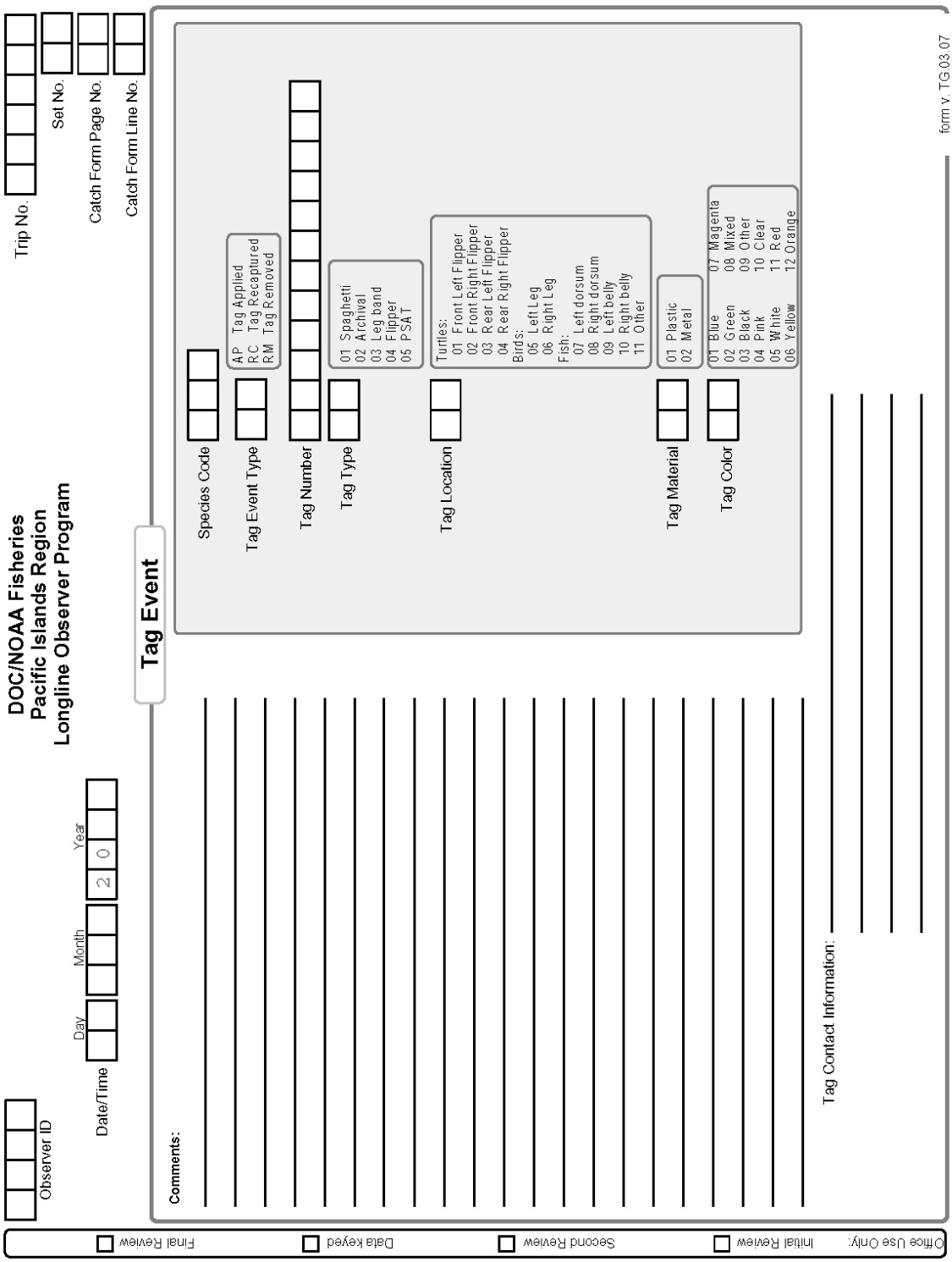


Photo Log

The Photo Log is a record of each photo taken by an observer during the cruise. It is used to match the photos to the data after they are developed.

A separate Photo Log should be filled out for each camera used. Record frame number, and a brief description of each photo taken.

Date: Enter the date the photo was taken.

Set: Enter a two-digit number indicating the set that the subject was captured.

Form: Enter the two letter code from the Form Code reference chart on the left edge of the form.

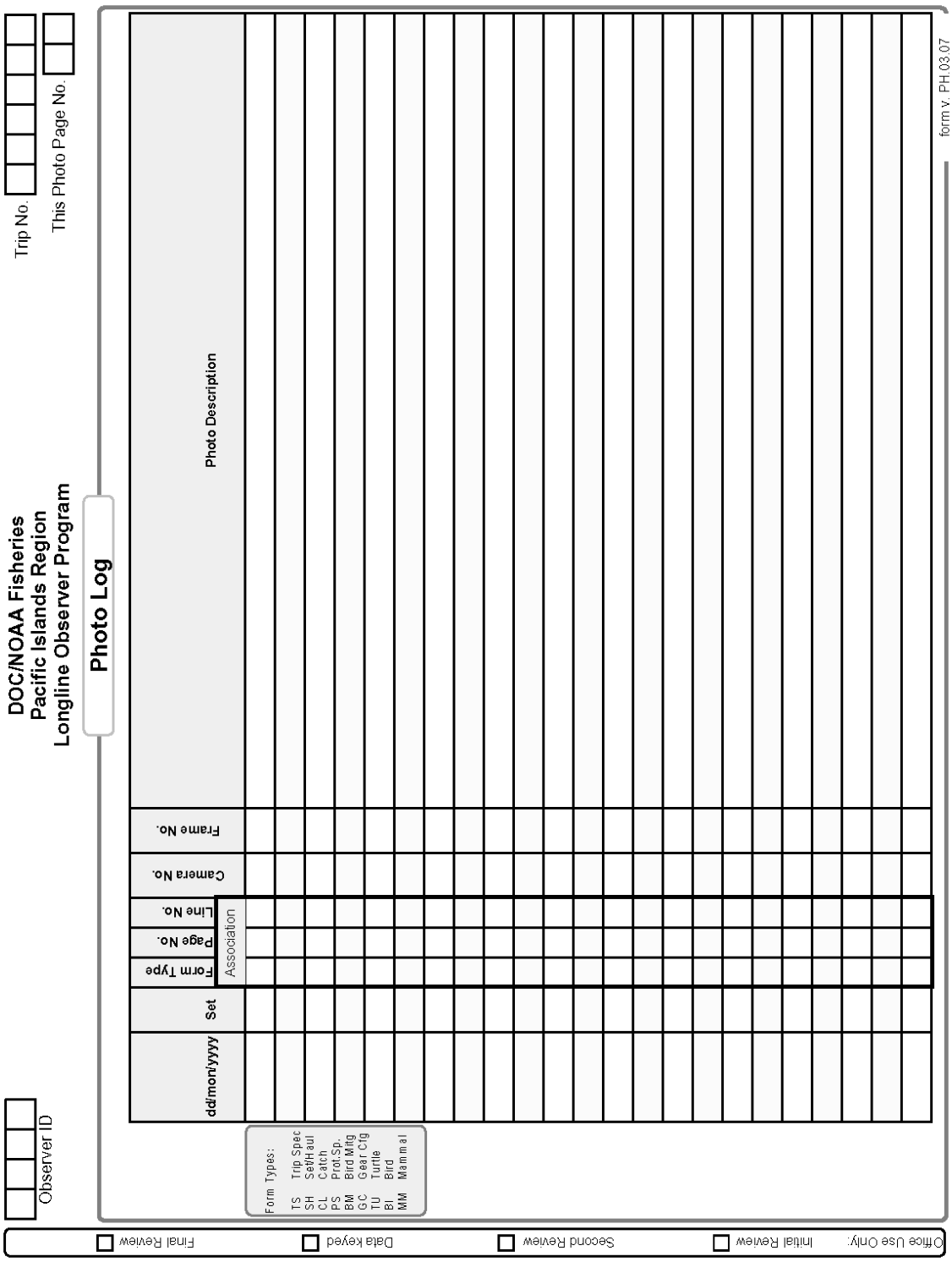
Page & Line No.: Enter the Page & Line no. of the form that refers to the subject of the photo.

Camera No.: Enter the number of the camera(s) issued to you for this trip.

Frame No.: Enter the frame number of the photo taken.

Photo description: A few key words, specimen ID number or short sentence that briefly describes the photo.

Photo Log Form



Sketch Log

The Sketch Form is provided as a place for observers to draw sketches of animals for ID purposes, or gear configurations.

Complete the boxes for Observer ID no., Trip number and Date.

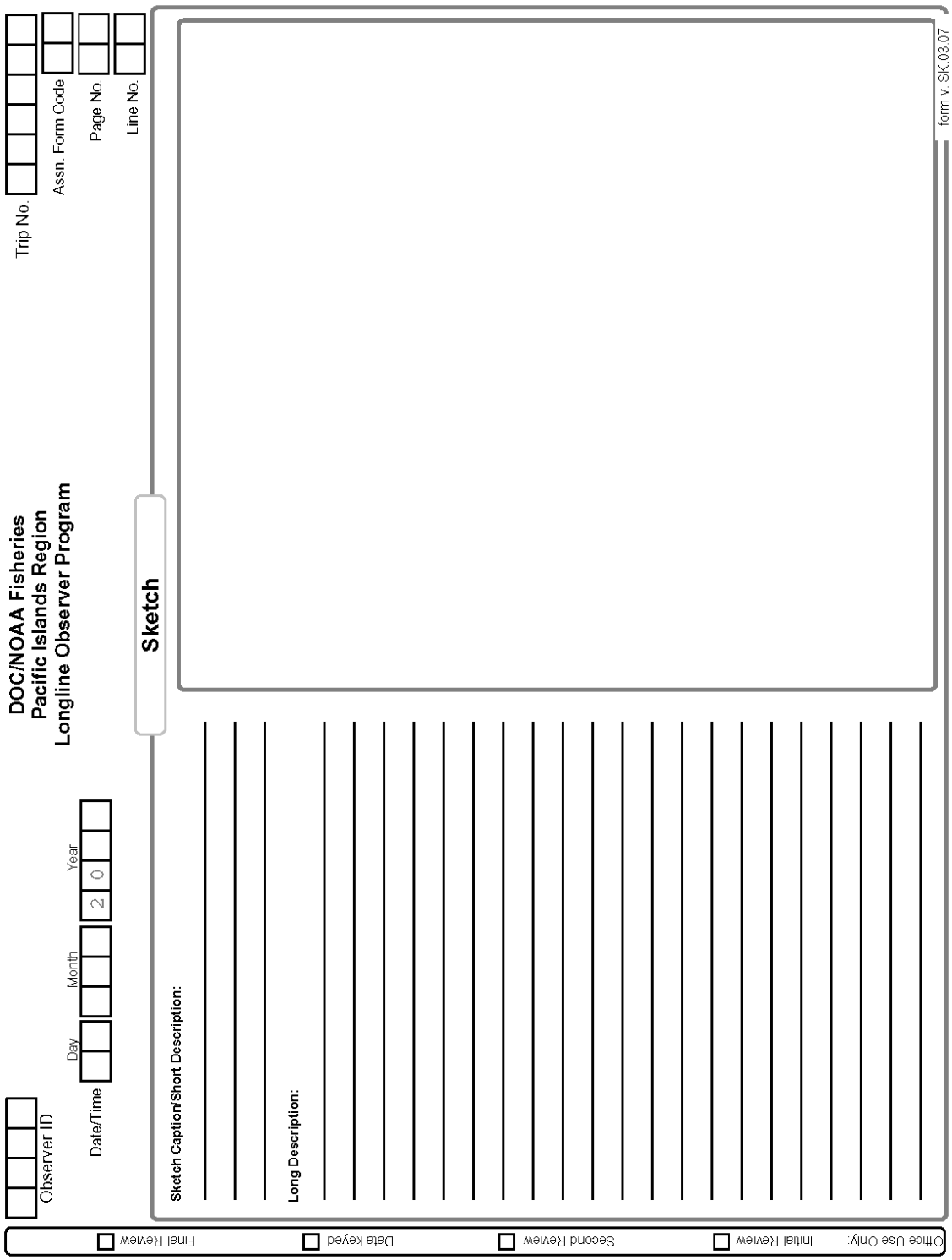
Assoc. Form: Use the two-letter code for the form that the sketch pertains to.

Page & Line No.: Fill in the page and line number of the form that contains the information the sketch is related to.

Sketch Caption/Short Description: A short sentence or key words describing the subject of the sketch. Once scanned, this will be used as the title of the image.

Long Description: Use this area for a detailed narrative of the event, situation or subject.

Sketch Form


Trip No.
Assn. Form Code
Page No.
Line No.
DOC/NOAA Fisheries
Pacific Islands Region
Longline Observer Program
Observer ID
Date/Time
Day
Month
Year
2 0
Sketch
Sketch Caption/Short Description:
Long Description:
form v. SK.03.07
Office Use Only:
Initial Review
Second Review
Data keyed
Final Review

Radio Reporting Instructions

Introduction

The ***L**ongline **R**adio **R**eporting* worksheets have been developed to provide observers with the means to provide departure/arrival data and specimen collection information to shore-side personnel, as well as to report difficult situations, harassment, or assault while on a vessel assignment

The reporting worksheet consists of four code boxes. The box in the upper right hand corner is completed by the Operations Coordinator and contains cruise information, giving the observer name, vessel name, call sign, and cruise number.

The box at the right center of each worksheet contains five personal status codes that describe how well you are being treated by vessel personnel and how it is affecting your work. The status codes are not for reporting medical conditions since these may require immediate attention.

The following definitions describe the five personal status codes.

Code 0: I'm OK - Work OK

"The situation aboard the vessel is acceptable. I am being treated with appropriate courtesy, according to my understanding of the position."

Code 1: I'm OK - Work Rough But Workable

"The situation aboard the vessel is somewhat deteriorated. I am meeting resistance to my duties. I am, however, confident that I can complete my assignment."

Code 2: I'm OK - Work Not OK But Workable

"The situation aboard the vessel is poor, some of my duties have been compromised. Because of difficulties obtaining specimens or positions, or use of the radio, there may be a need for enforcement to review my trip upon my return. I have some doubts that this assignment can be successfully completed."

Code 3: I May Not Be OK - Work Not OK

"The situation aboard the vessel is unbearable, I feel that to continue my duties would be a personal risk. I request that an enforcement agent be available for debriefing as soon as possible upon my return. I am being threatened and/or harassed."

In this instance, the agency will take steps to have a NOAA enforcement agent present when the vessel returns to port to investigate the situation.

Code 4: I'm Not OK - Work Not OK Situation Severe

"I have suffered an assault, PLEASE make every effort to remove me from this vessel at the earliest possible time. Notify all appropriate authorities so that they can assist me."

In this instance, the agency will take steps to involve NOAA enforcement personnel, the Federal Bureau of Investigation, and the United States Coast Guard. An evacuation will be arranged or the vessel will be asked to return to port.

General Instructions

As you prepare the weekly radio report for transmission to the PIAO Observer Program, assess your situation aboard the vessel. Using the number assigned to the code type that best describes the situation aboard the vessel, fill out the status box in the radio-reporting matrix.

0 = I'm OK, Work OK;
1 = I'm OK, Work rough, Workable;
2 = I'm OK, Work not OK, Workable;
3 = I may not be OK, Work not OK; and
4 = I'm not Okay, Work not OK.

Your status code will be transmitted along with your weekly radio report. The captain is to be apprized of the codes and their meaning prior to each transmission.

During decoding of the report, your status will be determined and appropriate action taken. If the Hawaii Observer Program does not receive a scheduled radio report, from either the SSB radio or from a commercial high seas radio-telephone service by Wednesday, close of business; the vessel owner or designated agent will be requested to contact the vessel, for the observer's report.

Note: If for any reason it is not possible to contact the Hawaii Observer Program directly, the observer should request that the radio report and a message be relayed through a nearby fishing vessel or by fax when feasible.

Remember, any instance of intimidation, harassment or interference is to be reported to the captain as soon as possible and documented in your Documentation Notebook.

At the bottom of the worksheet in the Radio Reporting Summary block, summarize your radio transmissions, whether you make contact or not. Record the date, time, frequency, and notes regarding the transmission.

The box in the upper left-hand corner of the worksheet is the radio-reporting matrix. This block consists of five rows and four columns. Each column is labeled: **A**, **B**, **C**, **and D.** Each row will receive a number that indicates the sequence in which the rows are to be transmitted. The information encoded in the radio reporting matrix will include your status code, departure

date and time, the type of specimens collected, and estimated date and time of arrival. The shaded areas are scramble boxes. Any number may be entered in these boxes to help disguise the encoded data.

Complete the radio-reporting matrix from top to bottom using numbers **0** through **9**. Begin by recording the one digit number in the status square that best reflects the situation aboard the vessel.

Next fill in the "DEP / ARR" box to indicate if the dates & times are Departure or Arrival information. When making a mid trip radio report, fill in the DEP / ARR box with 3 for Mid-trip.

Complete the departure date using two digits for the month (**01** through **12**) and two digits for the day (**01** through **31**).

Use the 24-hour clock when recording the departure time. Use two digits for the hour (**00** through **24**) and two digits for the minutes (**00** through **59**). The squares are labeled; "DEP / ARR MONTH", "DEP /ARR DAY", "DEP / ARR HOUR" and "DEP / ARR MINUTES."

Fill in the shaded squares with random numbers, 0-9. To avoid confusion, avoid using the same number to fill in the squares. Over the SSB radio, it is sometimes difficult to distinguish between the numbers like "111" and "1111".

On subsequent reports, unless there is a port stop, record a number greater than "**2**" in the first square of the "DEP / ARR MONTH" and "DEP / ARR HOUR" blocks to indicate that there are no changes to report. It is important to notify the Port Coordinator and the Observer Program office by telephone whenever the vessel makes a port stop.

To report specimens use the following codes:

0 = None
1 = Whole animal
2 = Skin plug (for mtDNA analysis)
3 = Skin plug & Whole animal
4 = Other parts

In order to facilitate the recovery of specimens at the docks, record the estimated date and time of arrival in the respective code boxes. If you do not know the scheduled arrival time or date, be sure a number greater than "**2**" is used in the first square of the "DEP /ARR MONTH" and "DEP /ARR HOUR" boxes to indicate that no information is available. Any number may be used in the subsequent squares as long as a number greater than "**2**" is used in the first square of the Departure/Arrival boxes. Remember, numbers should be used that make it more difficult to decipher the radio-reporting matrix. Always prepare new numbers for each transmission. Never communicate that your report is the same as last time and avoid using a single repetitive number for all boxes.

□ NEVER USE the common name of ANY protected species that have been caught or entangled during a cruise when talking on the SSB (to Honolulu or other observers).

NMFS, Pacific Islands Regional Office maintains a Single Side Band (SSB) high seas radio base station in Honolulu, Hawaii. The base station call letters are **KWL 48** (**K**ilo **W**hiskey **L**ima). This is a Federal Communications Commission (FCC) licensed station for international use and must comply with regulations.

Three channels are monitored daily Monday through Friday, except holidays. The following schedule is for Hawaii Standard Time.

Channel	Frequency	Time Schedule
Channel 8A	(8.294.0 MHz)	0800 to 0900 hours
Channel 12A	(12.353.0 MHz)	0900 to 1000 hours
Channel 16A	(16.528.0 MHz)	1000 to 1500 hours
Channel 12A	(12.353.0 MHz)	1500 to 1630 hours

Radio reports are to be made weekly on **Monday**. To initiate a call, arrange with the captain to call KWL-48 Honolulu using the SSB radio. Some vessel operators may prefer to call the data in for the observer. This is acceptable but you should be standing by to ensure its accuracy and in case there are questions or messages. If you do not get through on your first try, try two more times, waiting a couple of minutes between calls. If still no contact, try again later in an hour or two. If you do not get through on Monday, continue trying on Tuesday, Wednesday, and then Thursday. If on Thursday, you have not made contact with KWL-48, Honolulu, call the Hawaii Observer Program collect at (808) 973-2937 using a commercial radio-telephone service.

Keep in mind that due to daily solar activity, lower frequencies work better during early morning and late afternoon, while higher frequencies work better during mid-day.

To hail the Honolulu Port Field Station, speak clearly:

> **K-W-L 48, K-W-L 48, K-W-L 48, Honolulu, this is (name of the vessel spoken 3 times) followed by the vessel's call sign**. If there is a lot of static on the channel, you may need to say "Kilo-Whiskey-Lima" instead the letters "KWL" when hailing the Observer Program in Honolulu.
>
> Be sure to allow at least one minute between attempts and be careful not to "step on" other users on the frequency. FCC monitoring stations listen for infractions and issue citations.

After hailing, be alert to hear the station: **(name of the vessel spoken 3 times) and the call sign followed by this is K-W-L 48, K-W-L 48, K-W-L 48, Honolulu**.

If you hear KWL 48 calling please respond and try to establish contact. After contact is established, identify yourself (your first name is sufficient) and ask if the base station is ready to receive your data. If you don't get a response after waiting several minutes, you can try and give your radio report anyway. Occasionally we are able to hear observers calling in, but they are unable to hear a response from the program office.

□□□ DO NOT SAY THE POSITION OF THE Vessel
When making a radio report to the Honolulu Port Field Station, or talking to anyone else on the SSB.

When the base station is ready, transmit the lines of data, reading each horizontal line in numerical order. Listen after each line as the base station radio operator confirms the transmission. For example, if line one was **4760**, you would say, **"Line one, four, seven, six, zero; forty-seven, sixty, over."** KWL 48 Honolulu would respond, **"Roger, copy line one, four, seven, six, zero; forty-seven, sixty, over."**

After transmitting all five lines, ask if you have any questions about your duties. Also ask if there are any messages for you. During decoding of the report, your status will be determined and appropriate action taken. If no contact is made after three attempts, try again at a later time or on another frequency.

Remember, when calling in, try not to tie up the radio with idle "chit-chat", other observers may be waiting to call in. Also, it is not permitted to transmit music or communications containing obscene, indecent, or profane words, language, or meaning. Using standard procedure words, such as **"over"**, **"roger"**, and **"out"** is good operating practice. When communications are difficult due to noise or weak signals, you can avoid confusion over words by spelling them out using the standard phonetic alphabet that follows.

☆☆☆Radio Distress Procedure☆☆☆

In case it is necessary to transmit an emergency radio distress signal, it is important that the following procedure is used. Most single side band radios have a small red button that automatically switches the radio to the emergency broadcasting frequency and transmits an alarm signal. If not, then it will be necessary to manually switch to **2182 MHz** or **4125 MHz** on single side band radios (SSB) or to **channel 16 on VHF** radios. A radio distress signal may be sent by depressing the key button and calling **MAYDAY 3 times** followed by "This is (give call sign or vessel name) **3 times**, and give the following:

1. **Location**
2. **Nature of distress**
3. **Kind of assistance desired**
4. **Vessel description (include vessel length and color)**
5. **Number of persons on board.**

Standard Phonetic Alphabet

Letter	Word	Pronunciation
A	Alfa	AL FAH
B	Bravo	BRAH VOH
C	Charlie	CHAR LEE
D	Delta	DELL TAH
E	Echo	ECK OH
F	Foxtrot	FOKS TROT
G	Golf	GOLF
H	Hotel	HOH TELL
I	India	IN DEE AH
J	Juliette	JOO LEE ETT
K	Kilo	KEY LOW
L	Lima	LEE MAH
M	Mike	MIKE
N	November	NO VEM BER
O	Oscar	OSS CAR
P	Papa	PA PAH
Q	Quebec	KWE BECK
R	Romeo	ROW ME OH
S	Sierra	SEE AIR RAH
T	Tango	TANG GO
U	Uniform	YOU NEE FORM
V	Victor	VIK TUR
W	Whiskey	WISS KEY
X	X-ray	ECKS RAY
Y	Yankee	YANG KEY
Z	Zulu	ZOO LOO

Radio Report Sheet: Example

LONGLINE RADIO REPORTING WORKSHEET THREE

	A	B	C	D
( )	SPECIMENS	DEPARTURE/ARRIVAL HOUR		DEPARTURE/ARRIVAL MONTH
( )	DEPARTURE/ARRIVAL DAY			
( )			STATUS	
( )			DEPARTURE/ARRIVAL MINUTES	
( )				

OBSERVER NAME:
VESSEL NAME:
CALL SIGN:
CRUISE NUMBER:

PERSONAL STATUS
0 = I'M OK, WORK OK
1 = I'M OK, WORK ROUGH, WORKABLE
2 = I'M OK, WORK NOT OK, WORKABLE
3 = I MAY NOT BE OK, WORK NOT OK
4 = I'M NOT OKAY, WORK NOT OK

RADIO REPORTING SUMMARY

DATE	TIME	FREQUENCY	NOTES

Equipment List

Form holder: Used as a clipboard and stores extra forms, and pencils.

Pencils: Number two pencils are used on data forms and specimen tags.

Data Forms: The forms are printed on waterproof paper.

Click counters: Hand held counters are used to keep count of the numbers of floats and hooks during the haul back..

Tape measure: Used to collect all curvilinear morphometric data on sea turtles, marine mammals, and billfish.

Measuring stick: Used with moveable caliper jaws to collect all linear morphometric data on sea turtles, billfish, sharks, tunas, and some parts of fishing gear.

Whetstone: Used to maintain a sharp cutting edge on the dissection knife.

Knife: The knife is a sturdy, stainless steel boning knife used in dissections.

Plastic bags: Small Whirlpacks© bags are used to collect swordfish and tuna gonads in formalin. The medium size bags are used to collect swordfish anal spines. The large trash bags are used in conjunction with burlap bags to retrieve whole turtle specimens

Glass vials: For storing otoliths.

Cable ties: Cable ties are used to tie off fish stomachs and secure specimen tags to samples.

Specimen tags: Tags are used to label specimens whether whole animals, tissue, or anal spine samples.

Field guides: To assist with species identification; **stow inside, out of the weather if possible.**

Duffel & Cargo bags: Used to transport and store observer gear.

Safety and Rain gear: Observers are issued an Immersion Suit and a Type I PFD for use when vessel safety is in jeopardy. Both are equipped with emergency strobe lights. Observers are also issued rain gear, boots, and gloves (rubber & cloth)

EPIRB: An Emergency Position Indicating Radio Beacon is issued to each observer.

Camera: A camera is issued for photographing hooked or entangled protected species and animals which cannot be identified or brought back for positive identification.

5 gal. bucket: Used to store and transport the observer's specimens and some sampling gear.

Binoculars: A pair of binoculars is supplied to aid the observer in marine mammal and sea turtle sightings and identification.

Watch: Issued, if the observer doesn't have a watch.

Vernier calipers: Used to measure mainline and branch line diameters.

Tissue forceps: For handling otoliths and other small samples.

Gear Maintenance

It is the observer's responsibility to maintain issued gear.

Seawater promotes corrosion and deterioration. Routine use of light machine oil or WD-40 on the metal and moving parts of your equipment will keep it in operating condition. **Please use them.**

Keep caliper jaws and meter sticks clean and dry. Lubricate the caliper wing nuts with light machine oil. Calibrate with the measuring tape and adjust the stationary end of the caliper jaws as necessary.

Tape measures and calipers should be rinsed and wiped dry.

Life jackets, clipboards, and knives should all be cleaned with soap and fresh water and dried thoroughly.

Foul weather gear can be washed in cold water on gentle cycle and line dried.

Inspect the immersion suit, lubricate its zipper and test strobe light before every trip.

Rinse the knife handles with fresh water after each use to prevent corrosion.

Knives should be sharpened routinely at sea and at the conclusion of each trip.

Used collection bags, ties, and gloves should be discarded properly after use.

Identification guides and other paper goods should be wiped dry and kept inside.

Securely tighten the lids on all vials.

- Keep camera and binoculars dry. If binoculars are exposed to salt water, wipe them them with fresh water.

- If any piece of equipment becomes unusable, return it for a replacement.

Species Codes List

COMMON NAME	CODE	SCIENTIFIC NAME
FISH		
Barracuda, Great	**131**	*Sphyraena barracuda*
Billfish, Unidentified	**089**	Billfishes (Xiphiidae & Istiophoridae)
Bonito, Pacific	**003**	*Sarda chiliensis*
Crestfish	**906**	*Lophotus lacepede*
Dolphinfish	**914**	*Coryphaena hippurus*
Dolphinfish, Pompano	**913**	*Coryphaena equisetus*
Dogfish, Velvet	**097**	*Scymnodon sqamulosis*
Driftfish	**059**	Nomeidae
Escolar, (Smith's)	**013**	*Lepidocybium flavobrunneum*
Escolar, Longfin (Black mackerel)	**054**	*Scombrolabrax heterolepsis*
Bony Fish, Other Identified	**910**	Osteichthyes
Bony Fish, Unidentified	**700**	Osteichthyes
Flyingfish	**445**	Exocoetidae
Hammerjaw	**472**	*Omosudis lowei*
Jack, Cottonmouth	**041**	*Ursaspis helvola*
King-of-Salmon	**912**	*Trachipterus altivelis*
Lancetfish, Longnose	**909**	*Alepisaurus ferox*
Lancetfish, Shortnose	**905**	*Alepisaurus brevirostris*
Louvar	**191**	*Luvarus imperialis*
Manta/Mobula	**129**	Mobulidae
Mackerel, Bullet	**019**	*Auxis rochei*
Mackerel, Jack	**055**	*Trachurus symmetricus*
Mackerel, Pacific	**051**	*Scomber japonicus*

Marlin, Striped	**092**	*Tetrapturus audax*
Marlin, Blue	**093**	*Makaira mazara*
Marlin, Black	**090**	*Makaira indica*
Mola, Common (Ocean sunfish)	**292**	*Mola mola*
Mola, Sharptail	**294**	*Masturus lanceolatus*
Mola, Slender	**298**	*Ranzania laevis*
Needle Fish, Gaping	**474**	*Ablennes hians*
Oarfish	**911**	*Regalecus glesne*
Oilfish	**014**	*Ruvettus pretiosus*
Opah	**467**	*Lampris guttatus*
Pomfret, Brama	**903**	*Brama spp. (B. orcini & B. japonica)*
Pomfret, Lustrous (Brilliant)	**918**	*Eumegistus illustris*
Pomfret, Sickle	**908**	*Taractichthys steindachneri*
Pomfret, Dagger	**907**	*Taractes rubescens*
Pomfret, Rough	**904**	*Taractes asper*
Puffer, Pelagic	**293**	*Lagocephalus lagocephalus*
Rainbow Runner	**058**	*Elagatis bipinnulatus*
Ray, Other Identified	**919**	Rajiformes
Ray, Unidentified	**170**	Rajiformes
Remora/Suckerfish	**127**	Echeneidae
Ribbonfish, Scalloped	**902**	*Zu cristatus*
Ribbonfish, Tapertail	**901**	*Trachipterus fukuzakii*
Sailfish	**095**	*Istiophorus platypterus*
Scabbardfish, Razorback	**053**	*Assurger anzac*
Scad, Mackerel	**296**	*Decapterus macarellus*
Scad, Bigeye	**297**	*Selar crumenophthalmus*
Shark, Basking	**156**	*Cetorhinus maximus*
Shark, Bigeye Thresher	**147**	*Alopias superciliosus*
Shark, Bignose	**944**	*Carcharhinus altimus*
Shark, Blacktip	**149**	*Carcharhinus limbatus*
Shark, Blacktip Reef	**948**	*Carcharhinus melanopterus*

Shark, Blue	**167**	*Prionace glauca*
Shark, Common Thresher	**155**	*Alopias vulpinus*
Shark, Cookie Cutter	**136**	*Isistius brasiliensis*
Shark, Crocodile	**143**	*Pseudocarcharias kamoharai*
Shark, Dusky	**164**	*Carcharhinus obscurus*
Shark, Galapagos	**947**	*Carcharhinus galapagensis*
Shark, Gray Reef	**137**	*Carcharhinus amblyrhynchos*
Shark, Longfin Mako	**938**	*Isurus paucus*
Shark, Megamouth	**192**	*Megachasma pelagios*
Shark, Oceanic White-Tip	**138**	*Carcharhinus longimanus*
Shark, Other Identified	**935**	Chondrichthyes
Shark, Pelagic Thresher	**148**	*Alopias pelagicus*
Shark, Salmon	**942**	*Lamna ditropis*
Shark, Sandbar	**943**	*Carcharhinus plumbeus*
Shark, Scalloped Hammerhead	**949**	*Sphyrna lewini*
Shark, Shortfin Mako	**151**	*Isurus oxyrinchus*
Shark, Silky	**139**	*Carcharhinus falciformis*
Shark, Smooth Hammerhead	**158**	*Sphyrna zygaena*
Shark, Tiger	**142**	*Galeocerdo cuvieri*
Shark, Unidentified	**936**	Chondrichthyes
Shark, Unid. Hammerhead	**157**	*Sphyrna spp.*
Shark, Unid. Mako	**939**	*Isurus spp.*
Shark, Unid. Thresher	**937**	*Alopiidae spp.*
Shark, White	**096**	*Carcharodon carcharias*
Snake Mackerel	**295**	*Gempylus serpens*
Spearfish, Shortbill	**094**	*Tetrapturus angustirostris*
Stingray, Pelagic	**193**	*Dasyatis violacea*
Swordfish	**091**	*Xiphias gladius*
Triggerfish, Unidentified	**291**	Balistidae
Triggerfish, Pelagic	**290**	*Canthidermis maculatus*
Tuna, Albacore	**005**	*Thunnus alalunga*
Tuna, Bigeye	**916**	*Thunnus obesus*
Tuna, Pacific Bluefin	**004**	*Thunnus orientalis*
Tuna, Skipjack	**002**	*Katsuwonus pelamis*
Tuna, Kawakawa	**009**	*Euthynnus affinis*
Tuna, Unidentified	**006**	Tunas (tribe: Thunnini)
Tuna, Yellowfin	**001**	*Thunnus albacares*
Wahoo	**057**	*Acanthocybium solandri*

Yellowtail	**040**	*Seriola lalandei*

SEABIRDS

Albatross, Black-Footed	**dNG**	*Phoebastria nigripes*
Albatross, Laysan	**dIM**	*Phoebastria immutabilis*
Albatross, Short-tailed	**dAL**	*Phoebastria albatrus*
Albatross, Unidentified	**dSP**	*Phoebastria spp.*
Alcid, Unidentified	**aSP**	Alcidae
Bird, Unidentified	**aVE**	Aves
Booby, Brown	**sLP**	*Sula leucogaster plotus*
Booby, Masked	**sDP**	*Sula dactylatra personata*
Booby, Red-Footed	**sSR**	*Sula sula rubripes*
Cormorant, Brandt's	**pPN**	*Phalacrocorax penicillatus*
Cormorant, Double-crested	**pAU**	*Phalacrocorax auritus*
Cormorant, Pelagic	**pPL**	*Phalacrocorax pelagicus*
Cormorant, Unidentified	**pSP**	*Phalacrocorax spp.*

SEA TURTLES

Turtle, Green/Black	**CM**	*Chelonia mydas / C. agassizi*
Turtle, Hawksbill	**EI**	*Eretmochelys imbricata*
Turtle, Leatherback	**DC**	*Dermochelys coriacea*
Turtle, Loggerhead	**CC**	*Caretta caretta*
Turtle, Olive Ridley	**LV**	*Lepidochelys olivacea*
Turtle, Unidentified	**UT**	Testudines
Turtle, Unidentified Hardshell	**UH**	Chelonidae (non-Leatherback)

MARINE MAMMALS

Beaked Whale, Baird's	**BD**	*Berardius bairdii*
Beaked Whale, Cuvier's	**ZI**	*Ziphius cavirostris*
Beaked Whale, Mesoplodont	**UM**	*Mesoplodon spp.*
Beaked Whale, Unidentified	**ZU**	Ziphiidae
Cetacean, Unidentified	**UC**	Cetacea
Dolphin, Bottlenose	**TT**	*Tursiops truncatus*

Dolphin, Unidentified Common	**DD**	*Delphinus sp.*
Dolphin, Long-Beaked Common	**DL**	*Delphinus capensis*
Dolphin, Short-Beaked Common	**DS**	*Delphinus delphis*
Dolphin, Fraser's	**LH**	*Lagenodelphis hosei*
Dolphin, N. Right Whale	**LB**	*Lissodelphis borealis*
Dolphin, Pac. White-sided	**LO**	*Lagenorhynchus obliquidens*
Dolphin, Risso's	**GG**	*Grampus griseus*
Dolphin, Rough-toothed	**SB**	*Steno bredanensis*
Dolphin, Spinner	**SL**	*Stenella longirostris*
Dolphin, Spotted	**SA**	*Stenella attenuata*
Dolphin, Striped	**SC**	*Stenella coeruleoalba*
Dolphin, Unidentified	**UD**	Delphinidae
Porpoise, Dall's	**PD**	*Phocoenoides dalli*
Porpoise, Harbor	**PP**	*Phocoena phocoena*
Porpoise, Unidentified	**UP**	Phocoenidae
Whale, Blue	**BM**	*Balaenoptera musculus*
Whale, Fin	**BP**	*Baleanoptera physalus*
Whale, Gray	**ER**	*Eschrichtius robustus*
Whale, Humpback	**MN**	*Megaptera novaeangliae*
Whale, Killer	**OO**	*Orcinus orca*
Whale, False Killer	**PC**	*Pseudorca crassidens*
Whale, Pygmy Killer	**FA**	*Feresa attenuata*
Whale, Melon-headed	**PE**	*Peponocephala electra*
Whale, Minke	**BA**	*Balaenoptera acutorostrata*
Whale, Sei	**BB**	*Balaenoptera borealis*
Whale, Short-finned Pilot	**GM**	*Globicephala macrorhynchus*
Whale, Sperm	**PM**	*Physeter macrocephalus*
Whale, Pygmy Sperm	**KB**	*Kogia breviceps*
Whale, Dwarf Sperm	**KS**	*Kogia simus*
Whale, Unidentified Kogia	**UK**	*Kogia sp.*
Whale, Unidentified	**UW**	
Fur Seal, Guadalupe	**AT**	*Arctocephalus townsendi*
Fur Seal, Northern	**CU**	*Callorhinus ursinus*
Fur Seal, Unidentified	**UA**	Arctocephalinae
Pinniped, Unidentified	**PU**	Pinnipedia
Sea Lion, California	**ZC**	*Zalophus californianus*
Sea Lion, Steller	**EJ**	*Eumetopias jubatus*
Sea Lion, Unidentified	**UO**	Otariinae
Seal, Harbor	**PV**	*Phoca vitulina*
Seal, Hawaiian Monk	**MS**	*Monachus schauinslandi*

Seal, Northern Elephant	**MA**	*Mirounga angustirostris*
Seal, Unidentified	**US**	Phocidae

Appendices

The appendices include the following:

- **Longline diagram.**
- **Dropperline diagram.**
- **Protocol for Collecting Sea Turtle Skin Biopsies.**
- **Cetacean Skin Biopsy Protocol. (incl. reference for filling out the Marine Mammal Life History Form and disentanglement guidelines)**
- **Fish Sampling Protocols**
- **Procedure for Attaching Pop-Up Satellite Tags.**
- **Instructions for attaching flipper tags (reference for filling out the Sea Turtle Life History Form)**
- **Longline hook size reference.**
- **Longline hook style reference.**
- **Temperature & Length Conversion Formulas**